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DERMATOPHYTOSIS—THE NEWER RINGWORM

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It is scarcely necessary to elaborate on the scope and limitations of the disease long known as ringworm Every physician can envisage how the term may have come into vogue, and how it was at first applied to a variety of more or less circumscribed lesions, annular and otherwise, which had a tendency toward peripheral spreading and perhaps central clearing I have no doubt that some cases of psoriasis and syphilis were included in that category in the olden days After that, with the discovery that in most of such cases fungus could be found, the term ringworm became confined to a more contracted group of lesions, not only circumscribed but even diffuse, which were caused by fungus, or at least in which fungus was found As it stands today, then, any disease of the skin (with the exception of favus) which is caused by fungus may be admitted into the category of ringworm Favus maintains a separate position by grace of tradition, but it belongs in the ringworm concept

It is obvious that it would be impossible to cover the entire subject of ringworm in a single paper For instance, the conventional way to treat the subject of ringworm in general is by region, as ringworm of the scalp, ringworm of the beard, of the nails, of the toes or of the groins Ringworm which affects the glabrous, nonhairy skin has been known in the past for the most part as tinea circinata and is the closest relative to the dermatophytosis which will be dealt with next

DERMATOPHYTOSIS

The term dermatophytosis etymologically speaking, should, of course, be all-inclusive to comprise all the ringworms, regional and otherwise Perhaps it should also include bacterial (phyton) infections, but that is rather too large an order "Epidermomycosis" and "epidermophytosis" are synonymous with it As it stands, it includes phases of ringworm which are in part old and in part new, but so much has been added to our knowledge of it of late that I feel quite justified in using the term "new" in the title without any qualification In a nutshell, it embraces the superficial fungus diseases which develop in intertriginous positions or which are extensions secondary to foci in such positions This definition excludes such deeper mycoses as sporotrichosis and blastomycosis However, it must be granted that there are forms of the disease which at times are quite unassociated with any demonstrable intertriginous disorder, making it possible here to overlap with tinea circinata I believe that there is a tendency to include the older tinea circinatas with dermatophytosis (at least in the pathologic sense) and cannot see any objection to it, it is the present-day trend to group these sundry and perhaps bizarre clinical expressions (as in syphilis and Duhring's disease) as soon as a relationship can be established between them Particularly should this be the case when, as in dermatophytosis, they are etiologically homogeneous Therefore, dermatophytosis includes all those superficial fungous infections of the glabrous parts of the skin, particularly the intertriginous forms or those with intertriginous affinities

Before passing, then, to the more systematic considerations of dermatophytosis, be it advertised that the phase of the subject which is particularly "new" to the profession is the realization that many scaly, more or less discoidal plaques on the skin which have been heretofore regarded as eczemas or, less frequently, as psoriasis or lichen planus, as well as certain obstinate intertrigos, have been demonstrated to be caused by fungus and therefore to be expressions of dermatophytosis Like appendicitis, the disease has been with us long since, the "new" phase of it is born in ourselves Perhaps the role of yeasts as etiologic agents will also be proved to comprise a phase of this "newer" ringworm, as will be brought out more fully later

FREQUENCY

It will not be necessary to dwell very long on the frequency of the occurrence of ringworm At the University of Pennsylvania, we have found that 67 per cent of 100 medical students examined had more or less severe ringworm of the toes, and that of these it was possible to demonstrate the fungus by culture in 5 per cent A Boston dermatologist, Dr Charles J White, reported 150 cases a year in his private practice alone It is so important that the public health laboratories recently conducted a survey of the situation by means of a questionnaire broadcast among representative dermatologists Every physician will at once realize how common the condition is when I say that the familiar cracked toe and soft corn is frequently nothing more nor less than a fungous infection It is a particular scourge in our Southern states

It is not a disease that kills It does sometimes quite incapacitate, secondary infections occur taking the form of an eczema which is so itchy or painful as to prevent walking or to incapacitate otherwise I recall a music teacher who had the disease around the genitalia The itching was so intense that her sleep was interfered with to the extent that she almost became a candidate for the insane asylum

SYMPTOMATOLOGY

The symptomatology is highly varied because the part affected may be so different and because secondary infection so readily modifies the appearance of the primary involvement In a short paper like this it is impossible to give all of the shadings in symptomatology and differential diagnosis, indeed, I feel that the analytic physician who knows eczema can construct for himself the symptoms after what I have just stated about the disease tending to be primarily intertriginous *and superficial* Let *it be put this way* First, when dealing with a superficial erythematous disorder in an intertriginous position, it is advisable to consider ringworm Sometimes *it has the features of an acute* eczema, being moist or even suppurative Again, there are other forms which are dry, finely scaly, and perhaps brownish Other forms may be definitely thickened and as strongly scaly as one sees in an old, chronic eczema "Eczematoid ringworm" is a commonly used designation for some forms The intertriginous parts commonly affected are the toes, particularly between the fourth and the fifth, the groin, between the fingers, between the third and the fourth, in the axilla, under the breasts, and around the anus Some cases of pruritus ani are caused by a ringworm fungus In short, the cutaneous changes may run the whole gamut from acute erythematous through vesicular and pustular into the chronic scaly and indurative types

DIFFERENTIAL DIAGNOSIS

It would be presumptuous to attempt to give the complete differential diagnosis of dermatophytosis in a paper of this scope, involving as it does a consideration of such conditions as eczema, syphilis, psoriasis, lichen planus and pityriasis rosea[1] Some of the forms are classic, but many require the most careful consideration of the skilled dermatologist and are often diagnosed only by exclusion, i e, from a thorough knowledge and insight of other dermatoses which may more or less resemble dermatophytosis Fortunately, we have a recourse by identifying the fungus, a life-saver for the practitioner The technic is one of the simplest of all technical procedures—so simple that it should not be designated as a laboratory test It is an office test, and is performed as follows

Summary of American Species

	Cases		Cases
Trichophyton interdigitale	140	Trichophyton acuminatum	2
Epidermophyton cruris	54	Trichophyton granulosum	2
Unidentified	20	Trichophyton lacticolor	2
Trichophyton rubrum	17	Trichophyton plicatile	1
Trichophyton gypseum	17	Trichophyton amethysticum	1
Oidium albicans	8	Trichophyton violaceum	1
Trichophyton asteroides	3	Sporotrichum schenkii	1
Trichophyton pedis	3		
Total			272

Scrapings are collected for microscopic examination, a scalpel being used as a rule and material chosen preferably from the *margin* of a patch On these scales on a glass slide, one or two *small* drops of 10 per cent sodium hydroxide solution are placed The coverslip is then applied, and the preparation is ready for examination under the microscope This is indeed a procedure of the utmost simplicity, and one from which no practitioner can excuse himself On the other hand the knowledge of the appearance of the ringworm fungus may *demand some experience, but this can be* acquired after a few trials, and the materials for the microscopic examination are readily available The fungus can almost always be seen under the low power of the microscope, but it is always better to confirm the *first impressions with the high power* In the case of thick scrapings, such as come from between the toes, ten or twelve hours may be required for them to clear up sufficiently in the alkaline solution I make it a rule not to give a final diagnosis on such materials until I have reexamined the preparation the next morning The only serious objection to this test lies in its negative phase the fungus is not always found even in known cases of ringworm From this it follows that after one failure successive attempts should be repeatedly made to demonstrate the fungus Cultures only occasionally *lead to a positive diagnosis when direct* microscopic examinations have failed

Up to this point, the following working rules of thumb *might be given as guides to the diagnosis of* ringworm in a given patient First, the lesion is intertriginous, and, particularly, it may be sharply marginated Second, it has some of the qualities of eczema without quite fulfilling all the requirements In cases of this sort the third rule must be added Scrapings should be examined under the microscope by the alkali technic This much will enable the general practitioner to pick up a goodly number of cases of dermatophytosis It goes without saying that numbers will be missed, not alone by the general practitioner but also by the specialist

PATHOLOGIC MANIFESTATIONS

A great variety of micro-organisms is concerned in dermatophytosis Altogether in the United States no less than fifteen different species, belonging not alone to the hyphomycetes but also to the yeasts, have been described, and, if the foreign ones are added, the list is *multiplied The accompanying table gives the names* of the American species Whereas it was thought *in* the past that the hyphomycetes were almost exclusively concerned, yeast species and even sporotrichums are of late being more and more frequently incriminated It is obvious that the greatest care must be exercised in judging the pathogenic role of fungi in such a place as the skin The evidence in respect to yeasts has accumulated slowly, but all of Koch's postulates have been finally satisfied in a number of cases, the organism having reproduced disease on experimentally inoculated human volunteers It appears that pathogenic yeasts are present *on normal skins and that some additional* predisposing factor is necessary for them to invade the skin It is easy to speculate on the role which warmth moisture and microscopic abrasions in intertriginous positions play in this connection Certain it is, too, that individual predisposition plays a big part in the matter, there are large numbers of cases in which *the male has been affected without his consort's also* being infected

The toe cases are probably acquired in bath rooms, gymnasiums or turkish baths The highly strung man of affairs who perspires readily is much more predisposed than the phlegmatic laborer, the disease is preeminently one of private practice For its occurrence in other parts than the toes, however, one cannot lay down any such postulates

GENERALIZATION

A practical question that has arisen of late concerns the extent to which generalization may occur Thus, a variety of widespread eruptions has been described subsequent to an established dermatophytosis, some scarlatiniform, some taking the form of minute papules, and others delicately scaly which have received the name of "dermatophytid" The theory is that not only toxic material but also the actual fungus elements attain the blood stream and affect the skin In one or two isolated cases the organism has been recovered from the secondary lesion in the skin and also from cultures taken from the blood stream Cleveland J White has recently demonstrated the same species of fungus in swollen inguinal lymph nodes and between the toes of one patient This marks a radical departure from accepted notions in pathology, i e, that such a superficial infection as caused by fungi should give rise to such widespread and deep extension

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[1] White C J Fungus Diseases of the Skin Arch Dermat & Syph **15** 387 (April) 1927 Sutton Diseases of the Skin ed 6 St Louis C V Mosby Company 1926 Ormsby *Diseases of the Skin* ed 3 Philadelphia Lea & Febiger 1927

HYGIENE

It is my belief that many cases of ringworm of the toes are fully cured, that the fungus is completely eradicated, and that the well known obstinacy of the disease is referable to recurrences I come to this opinion partly because dermatologists have failed often to demonstrate fungus in the intervals between attacks, but chiefly on account of the ubiquity of the disease That is, there are so many places where a new infection may be picked up that, given a predisposed person, it is a simple matter to explain entirely new infections

It has been shown that fungus in cutaneous scales may remain viable for more than a year, under these circumstances a new infection may be picked up from the patient's shoes, slippers, bathroom rugs, and a host of other places The problem of complete disinfection of the patient's environment is thus a painful one, even though he were to burn more or less expensive clothing and furnishings there would still remain places outside his own environment where infection could be picked up The case appears hopeless as far as adequate hygiene is concerned

TREATMENT

Treatment of dermatophytosis other than that on the toes is highly satisfactory The application of parasiticide ointment in the case of the more sluggish lesions as a rule results in cure within a few weeks Tar, chrysarobin and ammoniated mercury, but particularly salicylic acid, are effective The latter may be employed as ointment in concentrations up to 8 per cent Whitfield's ointment has a deservedly high reputation and consists essentially of salicylic acid, 3 per cent, benzoic acid, 5 per cent, and a proper proportion of petrolatum

The treatment of the toes is a different matter A small percentage of cases is cleared up more or less promptly and, apparently, permanently Such cases are, however, in a very small minority In those cases in which the infection has extended onto the dorsum of the foot, there is again a most satisfactory improvement, but only up to a certain point Thus, the infection on the dorsum of the foot will clear up under the same treatment as that of eczema, but the infection between the toes will remain obdurate The acute condition on the back of the foot may be treated with soothing lotions, such as phenol (carbolic acid) and lime water, saturated boric acid solution, or whitewash Small doses of roentgen rays may be used as adjuvants, as in eczema When the case resolves into, or if it originally appeared as, a disease between the toes, the best treatment in my opinion is Whitfield's ointment, as mentioned Here paste (starch, 25 per cent, zinc oxide, 25 per cent, petrolatum, 50 per cent) may be substituted for petrolatum, it has the advantage of being stickier, and the grease dose not diffuse on the stocking as readily In this case the old application must be completely removed every evening with olive oil or petrolatum before a new application is made otherwise the residue will accumulate day by day and prevent the approach of the newly applied medicament to the hotbed of the disease If a fair trial of Whitfield's ointment has failed, tincture of iodine may be cautiously applied, or perhaps it is better to begin half strength, in view of the notorious susceptibility of some persons' skins to iodine Likewise, chrysarobin, 20 grains (1 3 Gm) to the ounce of ointment, may be tried Often the gamut of four or five different applications must be run before one is finally successful in clearing up the case But, as has already been mentioned, there is a very large number of cases in which treatment of any sort is unavailing, and it is frequently wise to take the patient into one's confidence before instituting treatment for ringworm of the toes

It is for these reasons that I have been looking about, in the laboratory, for an entirely new approach to the therapy of ringworm of the toes But what I particularly desire is a form of treatment which not only will cure the current attack but also will prevent reinfection from the environment This appears to be a rather large order—something which can with difficulty be expected of treatment by the use of drugs At present I am testing out certain bacteria in the hope of establishing them between the toes and thereby crowding out or otherwise interfering with the development of ringworm fungi between the toes The idea is somewhat similar to Metchnikoff's in arteriosclerosis and senility I have also found in the laboratory that ringworm fungi do not withstand high temperatures—such high temperatures for instance, as the skin can bear There is a possibility that, by baking the feet, we may clear up current attacks which have resisted parasiticide application, but this treatment does not guarantee against recurrences

SUMMARY

My aim in this paper has been to emphasize that

1 There are many lesions on the skin which have in the past been regarded variously as eczema, psoriasis, lichen planus and other dermatoses, or which have not been diagnosed at all and which are mycotic In view of the fact that fungous infection may take on such various forms, it is obligatory that in case of doubt scrapings be examined under the microscope This is particularly incumbent on the practitioner because it is so readily performed Anybody acquainted with the manipulation of a microscope can readily acquire the technic, and there is always an abundance of toe ringworm material available with which the physician can educate his eye The physician should be particularly suspicious of dermatoses in intertriginous positions which he cannot explain on the basis of ordinary intertrigo, particularly if the intertrigo is multiple, affecting the toes groins and axilla, for instance In every case, therefore, in which an intertrigo is seen in one position, the other positions should be checked up Examination of the toes should always be made in cases of tinea cruris or tinea axillaris Patients, even physicians, almost invariably deny that there is anything the matter with the toes, and it becomes necessary for the physician to check up with his own eyes on the condition in such cases

2 Yeasts are being urged more and more as causes of dermatophytosis, it remains to be seen whether they are all that they are represented to be

3 The patient must not be promised too much in regard to the treatment of the condition when it occurs between the toes, relief may be promised with reservations when there is a secondary eczematoid extension on the dorsum of the foot Salicylic acid still remains as the main drug in the treatment both of the toe and of other forms of dermatophytosis Pruritus ani, it must be remembered, is sometimes caused by fungi, and scrapings from the part may settle the question

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OBSERVATIONS IN A CASE OF RENAL GLYCOSURIA, DURING AND AFTER PREGNANCY

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The condition existing in the patient whom we are about to describe is usually referred to in medical literature as renal glycosuria In addition to this term, the literature contains several designations which have reference to the same symptom-complex John[1] objects to the term renal glycosuria because "all glycosuria is renal in origin, depending upon the renal threshold as well as the glycemic level", he suggests the term nondiabetic glycosuria Umber and Rosenberg[2] speak of renal diabetes or glycosuria innocens Cyclic renal glycosuria or cyclic glycosuria is a subgroup of renal glycosuria described by Jonas[3] and Faber[4] Benign glycosuria is a group term including the glycosurias of nondiabetic origin

The diagnosis of renal glycosuria may be made in cases in which there exists a chronic, nonprogressive, apparently harmless glycosuria without the symptoms of diabetes and without hyperglycemia in the fasting or postabsorptive states The renal threshold for dextrose excretion is lower than normal, i e, dextrose usually appears in the urine even when the blood sugar level is 0 08 per cent or lower The glycosuria is not influenced in a relative quantitative way by food or fasting The typical picture probably never changes to that of diabetes mellitus, but Joslin[5] stresses the need of conservatism in diagnosis and emphasizes the importance of prolonged observation before arriving at a diagnosis of renal glycosuria Most authors agree that no dietary treatment is necessary

Although numerous typical cases of renal glycosuria are reported, the condition is comparatively rare Therefore it is not surprising that no case report can be found in which an individual showing this condition has been studied during pregnancy Two of Crook's[6] patients may have had renal glycosuria, as sugar was still found in the urine ten and thirteen years after the pregnancies in which glycosuria was first discovered and the patients were still in good health, "certainly not diabetic", there are no complete data, however, on which to found this diagnosis

The condition existing in our patient is not to be confused with the transient glycosuria which often occurs during the time of pregnancy only and is spoken of as the "renal type" of glycosuria[7]

REPORT OF CASE

History—Mrs F, aged 21, was seen, Feb 3, 1925, because of sugar in the urine, and nausea and vomiting incident to pregnancy

The family history was recorded as unimportant except for the fact that her father was known to have had a little sugar in the urine at times (subsequent investigations by one of us [H M B] have revealed the facts that the patient's father has a very mild diabetes, two paternal uncles have renal glycosuria, in one, of the cyclic type and one sister shows a marked postprandial glycosuria which has not been studied The observations in this family have not been concluded, when complete the data will furnish the material for a later report on familial glycosuria) There was no marked obesity in the family

The patient had had the usual diseases of childhood She had had measles at 18 without complications During August, 1923, she had had a febrile illness of six weeks' duration diagnosed typhoid, during the third and fourth weeks the temperature had ranged around 104 F, and there had been a bloody diarrhea She had a healthy child, born May 14, 1923, and weighing 6 pounds 4 ounces (2 8 Kg), there had been constant nausea and vomiting throughout this pregnancy The menstrual periods had been regular but she had not menstruated since Dec 22, 1924 Her average weight had been 107 pounds (48 5 Kg) dressed

Sugar was first discovered in the patient's urine, Oct 21 1922, during the early weeks of her first pregnancy, all of ten subsequent urine examinations during this pregnancy had showed marked positive tests for sugar Starvation for three days and restriction of diet had not rendered the urine sugar free Aug 6, 1923, three months after confinement and three

TABLE 1—*Respiration Experiments**

	Respiratory Quotient	Calories per Hour	Rise in Calories per Hour	Calories per Square Meter per Hour	Rise Above Normal per Cent	Calories from Carbohydrate and Fat	Calories from Carbohydrate per Cent	Calories from Carbohydrate	Grams Carbohydrate Utilized		Blood Sugar Mg per 100 Cc	Urine Sugar Gm
									Total	Increase		
Basal	0 78	55 4		37 9	—2	47 1	26 3	12 3	3 0		78	+
79 Gm dextrose 45 minutes after	0 87	62 2	6 8	42 6	16 5	52 8	57 5	30 3	7 6	4 6	133	3 5
1½ hours	0 78	59 7	4 3	40 9	11 0	50 7	26 3	13 4	3 3	3	132	2 0
2½ hours	0 76	56	0 6	38 4	3 5	47 6	19 2	9 2	2 3	—7	100	1 5

Dextrose administration 79 0 Gm
Dextrose excreted 7 0 Gm
72 0 Gm
Dextrose metabolized 10 5 Gm 14 6 per cent of total

* Technic as described by Boothby and Sandiford Tissot gasometer and Haldane gas analysis apparatus The results demonstrate normal *utilization of dextrose*

days later, the urine had contained much sugar During the third and fourth weeks of the attack of typhoid, which had occurred a few days later, urine specimens had shown sugar on three days a fourth specimen had been sugar-free Subsequent to this illness, no urine examinations had been made and there had not been any restriction of diet She had never experienced any of the symptoms of diabetes

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[1] John H J Nondiabetic Glycosuria Endocrinology **10** 115 (March April) 1926

[2] Umber and Rosenberg Ueber insulinrefraktare Zuckerausscheidungen und Klassifikation des Diabetes auf Grund seines Verhaltens gegenuber Insulin Klin Wchnschr **4** 583 (March 26) 1925

[3] Jonas L Nondiabetic Glycosuria M Clin N Amer **10** 367 (Sept) 1926

[4] Faber K Benign Glycosuria as a Result of Disturbance in Blood Regulation Ugesk f Læger **88** 731 (Aug 12) 1926 abstr J A M A **87** 1784 (Nov 20) 1926

[5] Joslin E P The Treatment of Diabetes Mellitus ed 3 Philadelphia Lea & Febiger 1923 p 665

[6] Crook A Incidence of Glycosuria During Pregnancy Lancet **1** 656 (March 28) 1925

[7] John H J Glycosuria and Pregnancy, Surg Gynec Obst **42** 543 (April) 1926

Physical Examination—The patient s height was 5 feet 2 inches (157 5 cm), and her weight was 101 pounds (45 8 Kg) The examination did not reveal any physical abnormalities There was suggestive evidence of early pregnancy

A casual specimen of urine passed one and one-half hours after a meal contained 4 7 per cent sugar and no diacetic acid The following morning the fasting blood sugar taken before breakfast was 0 087 per cent, and a specimen of urine collected at the same time showed 3 3 per cent of sugar The blood Wassermann reaction was negative The reducing substance in the urine was shown to be dextrose by Rubner s test fermentation with yeast and dextrorotation in the polariscope March 6, 1925, respiration studies were carried out by Paullin[8] with the results shown in table 1, taken from his report

TABLE 2—*Daily Dextrose Excretion in Grams During the Period of the Author s Observations*

Date	Sugar in 24 Hour Urine		Fasting Blood Sugar per Cent	Comment
	Reduction per Cent	Total Grams		
2/ 4/25	3 3	88	0 087	Weight 106 pounds dressed last menstrual period 12/27/24
2/ 5/25	4 2	49		
2/ 6/25	+++	8	0 078	Respiration studies
3/12/25	2 8	47		Two meals daily no restrictions
4/ 1/25	2 9	49		
5/ 9/25	1 5	25		
5/22/25	2 7	39		
6/13/25	1 9	32		
7/16/25	3 2	38		
7/31/25	2 0	34		Weight 116 pounds dressed
8/21/25	3 1	45		
9/ 3/25	1 4	20		
9/20/25				Liquid diet baby born weight 7 pounds
9/21/25				Baby to breast soft diet
9/22/25	1 2	15		No fever
9/23/25	0 8	8		
9/24/25	0 1	0 9		Light diet
9/25/25	0	0		
9/26/25	1 0	7 2		
9/27/25	0 5	5 1		Urine fermented with yeast filtrate does not reduce
9/28/25	0 4	4 5		
9/29/25	0 6	8 2		
10/ 1/25	0 3	2.8		
10/ 2/25	0 7	6 7		
10/28/25	0 6	7 9		General diet no breakfast two meals daily
2/18/26	1 9	16		Rubner test positive for dextrose
3/31/26	1 9	23		
4/19/26	1 9	23		
5/12/26	1 7	20		
6/14/26	2.5	24		Nursing baby thrice daily
7/28/26	1 6	27		Nursing baby once daily
8/26/26	1 7	29		Baby weaned during July
9/13/26	2 2	26		
10/ 5/26	2 2	21		
11/28/26	2 6	37		Weight 103 pounds dressed ate heavily of sweets
12/ 6 26	1 6	8 5	0 078	
3/20 27	1 6	27		
5/28/27	+++	8 8	0 094	Weight 106 pounds dressed

Course—Table 2 shows the course of the glycosuria during pregnancy the puerperium the nursing period and since weaning the baby During the first six months of pregnancy there was marked nausea and vomiting during the first three months, twenty-seven ampules of corpus luteum were given hypodermically with slight relief After the onset of pregnancy and up to the present time no breakfast has been eaten

A study of table 2 reveals the fact that the dextrose excretion throughout pregnancy tended to be greater than subsequently During the puerperium the glycosuria was much less, increasing somewhat during the early nursing period and approaching the present level as the baby was gradually given fewer breast feedings

COMMENT

We were very much interested in the observation that following delivery there was a rapid decrease in glycosuria until the urine was sugar free on the sixth day of the puerperium, this was followed by a very gradual increase in the degree of glycosuria We held the opinion that this phenomenon resulted from the increased demand for dextrose to be utilized in the formation of lactose This opinion is supported by the following observations Nitzescu[9] showed that the lactose content of the milk from lactating sheep diminishes rapidly with starvation, following intravenous injections of dextrose, the lactose content returns rapidly to the normal level Commandeur and Porcher[10] amputated the breasts of two goats which later became pregnant and did not show sugar in the urine during pregnancy, for two days immediately following the delivery of normal young, the urine of both goats contained large quantities of a reducing substance which was proved to be dextrose Macleod[11] reports his observations on a depancreatized, diabetic, insulin treated dog, in which, about sixteen hours after the birth of the last of six pups, the mother displayed marked hypoglycemic symptoms accompanied by a blood sugar of 0 067 per cent, previous to and following this occurrence there had been hyperglycemia with the same diet and insulin dosage Parsons, Randall and Wilder[12] observed a pregnant woman who became sugar-free without insulin during the puerperium while receiving the same diet which had required an insulin dosage of 35 or 40 units during the two preceding years

Throughout pregnancy, the puerperium and the nursing period, numerous examinations of the urinary reducing substance were made in an attempt to discover whether there might be a simultaneous appearance of lactose After complete fermentation of the urine specimen with yeast, the filtrate never caused reduction of Benedict's solution An attempt at inversion with dilute acid and heat did not produce any change in the percentage of sugar or in the degree of polariscopic rotation Rubner's test always gave the red reaction for dextrose

The two children of this patient, both males, have shown fairly normal development except for the fact that the second child shows a mild degree of rickets Nov 29, 1926, observations were made on the height and weight of both children The older, aged 3 years 6½ months, was 38½ inches (97 7 cm) in height and weighed 36 pounds 10 ounces (16 6 Kg), on two out of four occasions, the urine has shown a trace of reducing substance with Benedict s solution The younger, aged 14 months, was 30½ inches (77 4 cm) in height and weighed 23 pounds 12 ounces (10 8 Kg), one specimen of urine did not show any sugar

SUMMARY

In a case of renal glycosuria in which the known duration of the glycosuria was four years, eight months, there have been two successful pregnancies and an attack of typhoid In urine examinations made on fifty-five days, the urine was found sugar free on only two occasions during typhoid, and on the sixth day of the puerperium of the second pregnancy The variations in the degree of glycosuria during the second pregnancy, puerperium and nursing period are of special interest

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[8] Paullin J E Glucose Utilization in Renal Glycosuria Arch Int Med **37** 88 (Jan) 1926

[9] Nitzescu L L Action des sucres en injections intraveineuses sur la secretion du lait Origines du lactose Compt rend Soc de biol **93** 1319 (Nov 27) 1925

[10] Commandeur and Porcher Recherches sur les sucres urinaires chez la femme enceinte en couche et nourrice Arch gen d med **194** 2241 1904

[11] Macleod J J R Carbohydrate Metabolism and Insulin New York Longmans Green & Co 1926 p 83

[12] Parsons E Randall L M and Wilder R M Pregnancy and Diabetes M Clin N Amer **10** 679 (Nov) 1926

478 Peachtree Street

THE EFFECT OF CARBON ARC IRRADIATION ON THE HEALTH OF A GROUP OF INFANTS *

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In a recent communication we[1] reported the results of a study of a group of infants irradiated during the winter months by means of the mercury vapor lamp The object of the investigation was to determine primarily whether ultraviolet radiations diminished the occurrence of respiratory infection It was shown that in spite of systematic exposures to these rays the incidence of these diseases was not altered

It is thought that the frequency of respiratory infections during the winter is due in part to a deficiency of sunlight The mercury vapor lamp emits an exceptionally large intensity of invisible or ultraviolet rays as compared to the sun which produces only 1 per cent of these radiations It is evident, therefore, that the rays of the mercury vapor lamp are by no means the counterpart of those of the sun It is quite possible, as Hess[2] has suggested, that there is some virtue in the solar spectrum considered as a whole and that the value of the ultraviolet radiations may be affected by the presence of the longer rays The rays of the carbon arc lamp more closely approximate those of the sun We therefore thought it worth while to repeat our study of the previous year, using a lamp fitted with white flame carbons, the radiations of which resemble most nearly those of the sun[3]

One of our infant wards was selected for this investigation The study was limited to infants because they are much more prone to respiratory infections than older children The infant ward in question is very large and well ventilated The distance between beds is maintained at 3 feet During the entire study, the personnel was unchanged We selected nineteen infants and separated them into two groups, one to be irradiated and the other not to be irradiated, the former consisting of nine and the latter of ten infants The ages, weights and heights of both groups corresponded closely, so that results were comparable The dietary was the same vegetables, cereals, cod liver oil and orange juice were given in addition to adequate quantities of pasteurized milk The nonirradiated infants were not in the ward during the period of irradiation, in order to avoid any possibility of contact with the rays of the carbon arc lamp

The present investigation was not confined only to the effect of irradiation on respiratory infections, but its scope was enlarged to include the influence on the hematopoietic and lymphatic systems as well as on the general nutrition

To facilitate interpretation the study was subdivided into three periods, two of irradiation totaling three months, and one subsequent period comprising one and one-half months Prior to the investigation a complete physical examination was carried out which included notations of the height, weight, hemoglobin percentage (Dare) and the number of erythrocytes and leukocytes of the blood Similar examinations were made at intervals of six weeks throughout the study (tables 1 and 2)

TECHNIC

A four arc Wohl lamp weighing about 75 pounds and having a length of 3 feet, a width of 2 feet and a depth of 9 inches was especially constructed for this study The rear and two sides were protected with spark screens, the front screen being removable to permit the insertion of new carbons The lamp was supported on a stand which could be adjusted to a height varying from 2 to 4 feet With this lamp the light irradiated to all sides, thus enabling the treatment of a group of infants simultaneously The lamp was operated on 220 volts at 25 amperes

TABLE 1—*Clinical Data of Infants Treated for a Period of Months with Carbon Arc Irradiation*

Case	Age Months	Weight Pounds	Height Inches	Hemoglobin per Cent	Cervical Glands	Spleen	Liver	Infection
			Preliminary Examination					
1	10	19	28½	68	+	0	1F	
2	6	13¼	23¾	75	+	2F	2F	
3	5	11¾	24	65	0	0	0	
4	8	15¼	24¾	48	+	2½F	1F	
5	13½	20¾	28	70	0	0	0	
6	9	17	28	65	+	0	1¼F	
7	10½	19¼	27¼	65	+	0	1F	
8	8	17¼	27¾	68	+	0	0	
9	11½	18¾	27¼	73	0	0	0	
			First Period (0 to 1½ Months) Irradiation					
1	11½	19¾	29½	70	+	0	1F	+
2	7½	15¼	25	65	+	1¼F	2F	+*
3	6½	13¾	25	64	0	0	0	+
4	9½	15¾	25¼	55	0	2F	2½F	+
5	15	21¾	29½	65	0	0	0	+*
6	10½	18½		75	+	0	2F	+
7	12	20¼	27¾	60	+	0	0	+
8	9½	19¼	29	64	+	0	0	+
9	13	19¾	28½	69	+	0	0	+
			Second Period (1½ to 3 Months) Irradiation					
1	13	20¼	30½	52	+	0	0	0
2	9	15¼	27	62	0	1F	2F	0
3	8	14¾	27	63	0	0	0	
4	11	15¾	26¼	50	+	2F	2F	+
5	10½	21¾	30¼	60	0	0	0	0
6	12	19¼	30	58	+	0	1F	+
7	13½	21¾	29	60	0	0	0	0
8	11	19¾	29½	65	0	0	1F	0
9	14½	20¼	28¾	68	+	0	0	0
			Subsequent Period (3 to 4½ Months) Nonirradiation					
1	14½	20	30½		+	0	2F	0
2	10½	15½	27	45	+	2F	2F	+*
3	9½	16	27	65	0	0	0	0
4	12½	17½	27½	39	+	1F	2F	0
5								
6	13½	20	30	65	+	1F	2F	+
7	15	21¾	29¾	60	+	0	0	0
8	12½	21½	30	54	+	0	1F	0
9	10	21	29	65	0	0	0	0

* Multiple infections

Four naked infants were arranged in their bassinettes about the carbon arc lamp at a distance of 2 feet from the source of irradiation The eyes were protected with ordinary gauze bandages The infants were exposed to the rays for a period of thirty minutes At the end of the first fifteen minutes they were turned, so that almost the entire surface of the body received an equal irradiation This procedure was repeated every other day from December 15 to March 15 The total exposure to the rays amounted to twenty-two and one-half hours It was not necessary as in the case of the mercury vapor lamp to begin with short exposures, on account of the mild intensity of the short irritating rays of the carbon arc lamp An erythema developed in most of the infants during the exposure to the rays and lasted for about eight hours No burns occurred, and the pigmentation of the skin was somewhat disappointing It is interesting to note in connection with this investigation that the infants tanned remarkably on exposures to the sun during the period subsequent to irradiation and that the pigmentation was of a different hue

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* From the Home for Hebrew Infants service of Dr Alfred F Hess

[1] Barenberg L H Friedman Irving and Green David The Effect of Ultraviolet Irradiation on the Health of a Group of Infants J A M A 87 1114 1117 (Oct 2) 1926

[2] Hess A F The Ultraviolet Rays of the Sun J A M A 84 1033 1037 (April 4) 1925

[3] Schwartz R P Carbon Arc Radiation J A M A 88 632 634 (Feb 26) 1927

TABLE 2—*Clinical Data of Infants Not Treated with Carbon Arc Irradiation*

Case	Age Months	Weight Pounds	Height Inches	Hemoglobin per Cent	Cervical Glands	Spleen	Liver	Infection
				Preliminary Examination				
1	7½	15¼	26	62	+	1F	2F	
2	9	18	27½	72	+	0	0	
3	5	15½	25½	73	0	0	2F	
4	7½	14	25	46	+	2F	2F	
5	6	15½	26	73	+	0	1F	
6	4½	13¾	25¼	82	+	0	1F	
7	11	23¼	28¼	63	0	0	0	
8	14	22½	29½	73	+	0	0	
9	11¼	16¾	25¾	74	0	0	0	
10	8	17¼	26¼	75	0	0	2F	
				First Period 0 to 1½ Months				
1	9	17½	27¼	68	+	1F	1F	+
2	10¼	18	28½	45	+	0	0	+
3	6½	17	27¼	55	+	0	2F	+*
4	9	15½		[illegible]	+	2F	2F	+
5	7¼	17	27	70	+	0	1F	+
6	6	15½	27¼	74	+	0	1F	+
7	12¼	25½	29¼	[illegible]	0	0	0	0
8	15½	23½	30¼	60	0	0	0	+*
9	13	18½	28¾	[illegible]	+	0	0	+
10	9½	19	27¾	60	0	0	1F	+*
				Second Period 1½ to 3 Months				
1	10½	18	29¼	53	0	0	0	+
2	12	20½	29	55	+	0	0	0
3	8	17¾	[illegible]	55	0	0	2F	+
4	10½	16½	27½	35	+	2F	2F	+
5	9	17¾	28½	60	+	0	0	0
6	7½	16¾	27½	70	+	0	1F	0
7	14	25¼	30	60	0	0	0	0
8	17	28½	31	70	0	0	1F	0
9	14½	18¾	29½	55	+	0	0	+
10	11	21	28	55	+	0	0	+
				Subsequent Period 3 to 4½ Months				
1	12	17	29	69	+	0	0	+
2	13½	21¾	30¾	65	+	0	0	0
3	9½	21	29½	70	+	1F	2F	0
4	12	17	27½	43	+	2F	2F	0
5	10½	18½	28½	60	+	0	0	0
6	9	18	28	70	+	0	2F	0
7	15½	26	31	61	0	0	0	0
8	18½	24	31	68	0	0	0	0
9	16	22	29	70	+	0	2F	0
10	12	19	31	63	+	0	0	0

* Multiple infections

As stated, the total exposures to the rays was twenty-two and one-half hours, so that there can be little doubt that the infants received sufficient irradiation In this connection it is interesting to note that one of the infants prior to irradiation had marked rickets and that complete healing was noted on the roentgenogram after ten exposures

A glance at table 3 shows that, in spite of these systematic exposures to the carbon arc rays, the incidence and frequency of respiratory infections were not influenced In fact, the irradiated group had infections somewhat more often than the others In this respect the result coincided with that obtained with the mercury vapor lamp last year It is evident, therefore, that artificial irradiation from these two sources cannot be depended on to reduce the incidence of respiratory infections and curb the high morbidity that occurs during the winter months

It is true that the spectrum of the carbon arc approximates closely that of the sun, yet we know that even slight variations in intensity at various levels are sufficient to bring about different physiologic results It is therefore fallacious to make broad comparisons between two sources of light, for however they may resemble each other there may nevertheless be essential distinctions in their action on the cells or fluid of the human body For instance, Hess [2] showed that a difference of less than twenty millionths of a millimeter in wavelengths determined whether ultraviolet radiations were specific or inert in relation to their action in rickets It is possible, therefore, that certain solar rays which may have value in the prevention of infection are not sufficiently represented in the spectrum of the carbon arc lamp

Eidinow [4] found that artificial irradiation caused an increase in the bactericidal power of the blood, and that the degree of this "response" depended on the size of the area of the skin exposed When too large a surface was treated, no increase in the bactericidal power resulted, in fact, a diminution came about in some instances We do not believe that our results suffered from the fact that the infants were overirradiated Furthermore, in a recent report, Hill and Clark [5] have shown that ultraviolet radiation did not increase the resistance of white rats to infection

It seems quite possible, indeed probable, that the various meteorological conditions which are associated with the increased intensity of the solar rays in the spring may well account for the beneficent effect of irradiation at that time as compared with irradiation carried out indoors in the course of the winter

The effect of repeated irradiation on the blood cells has not been sufficiently studied Gutstein [6] found that erythrocytes and hemoglobin were not influenced by systematic exposure to the ultraviolet rays of the mercury vapor lamp, whereas a definite increase of lymphocytes with a corresponding diminution of the polymorphonuclear leukocytes was observed According to Bauman [7] there was an increase of the polymorphonuclear leukocytes followed quickly by a relative and absolute increase of the lymphocytes The lymphocytosis persisted throughout the period of irradiation It is clear that there is no unanimity of opinion on this aspect of the subject

TABLE 3—*Relation of Irradiation to Respiratory Infections*

	Irradiation					
	Period I (0 to 1½ Months) Infections		Period II (1½ to 3 Months) Infections		Postirradiation (3 to 4½ Months) Infections	
Number of Children	Total Incidence	Duration Days	Total Incidence	Duration Days	Total Incidence	Duration Days
Nine irradiated	15	5½	3	1½	4	9½
Ten nonirradiated	11	5	4	3	0	0

The study of the blood in our infants revealed that at the end of the first period of irradiation the hemoglobin percentage practically remained unchanged in the irradiated group, whereas in the nonirradiated group a drop of 12 per cent was noted At the end of the second period a fall of hemoglobin was observed among the infants comprising the irradiated group but not among those which did not receive irradiation. On account of the repeated infections and the limited number of infants, no definite conclusions can be drawn, although the maintenance of the level of hemoglobin throughout the first period of irradiation suggests the possibility of a stimulating effect of the rays. In the previous study with the mercury vapor lamp, no similar influence on the hemoglobin was observed.

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[4] Eidinow Albert A Note on Dosage in Phototherapy Lancet **2** 645 648 (Sept 25) 1926

[5] Hill C M and Clark J H Effect of Ultraviolet Radiation on Resistance Am J Hyg **7** 448 462 (July) 1927

[6] Gutstein M Zur Behandlung der Lungentuberculose mit ultraviolettem Licht *Beitr z Klin d Tuberk* **35** *233 282* (June 30) 1916

[7] Bauman Max Ueber Veranderungen der weissen Blutzellen nach Bestrahlung mit kunstlicher Hohensonne Ztschr f exper Path u Therap **21** 409 424 (Aug 26) 1920

The number of erythrocytes and leukocytes was not affected by irradiation. At the end of the first period, the percentage of polymorphonuclear cells in the irradiated group rose from 20 to 33 per cent. This increase was observed also at the end of the second period, 35 per cent in the irradiated as compared to 22 per cent in the nonirradiated. In the period subsequent to irradiation, the polymorphonuclear cells fell to 26 per cent. It may be noted that there was less infection in the irradiated than in the nonirradiated group during the second period, so that the increase of polymorphonuclear cells cannot be attributed to infection. We believe that it was due to the irradiation.

Table 4.—*Effect of Irradiation on Growth in Height (Average)*

	Preirradiation Period		Irradiation Periods				Postirradiation Period (3 to 4½ Months)	
			I (0 to 1½ Months)		II (1½ to 3 Months)			
Number of Children	Age Mo.	Height In.	Height In.	Growth In.	Height In.	Growth In.	Height, In.	Growth In.
Nine irradiated	9	26.5	27.7	1.2	28.5	0.8	29	0.5
Ten nonirradiated	8½	26.4	27.3	0.9	28.8	1.5	29.4	0.6

Springer and Tardieu[8] studied the relation of ultraviolet irradiation to the growth of rabbits. They confined them in a cellar and found that those which received irradiation thrived normally, whereas those which were not exposed to the mercury vapor lamp failed to grow in weight and height.

The effect of the irradiation on the growth in height and weight of the infants was interesting (tables 4 and 5). At the end of the first period, the growth was greater in the irradiated group, which is all the more remarkable because of the more frequent infections among these infants. During the second and subsequent periods, the growth both in height and in weight was less among the irradiated group.

These results coincide with those obtained last year with the mercury vapor lamp and may be explained as due to an initial stimulating effect of the rays on the infant. This benefit was followed by a depressing action of the rays which persisted throughout the subsequent period. Hess[9] has warned of the dangers of overirradiation. It must be remembered that the use of artificial irradiation must be regarded as the administration of a powerful therapeutic procedure and that therefore an overdosage may be harmful.

As is well known, lymphatic tissue is highly susceptible to the action of radiant energy. A large thymus or a lymph node with malignant involvement has been known to become small following one exposure to roentgen rays. Jolly[10] has exposed the dissected thymus of the guinea-pig as well as the popliteal lymph nodes of the young rabbit to the mercury vapor lamp for thirty minutes at a distance of 12 cm. After several hours of irradiation, microscopic sections revealed superficial necrosis, about 5 mm. in thickness, a lesion which could not be produced by the longer rays.

Enlargement of the cervical glands was observed in 60 per cent of the infants prior to the investigation. Exposures to the rays failed to diminish the size of those nodes, and as far as we could observe there was no infection in the pharyngeal region which could account for their presence at the onset or their persistence at the conclusion of our study. In fact, we noted the development of enlargement of the cervical glands in the course of irradiation. The failure on the part of the rays is obviously due to the limitation of their penetrating power. It is possible that the failure to diminish the spleen, liver, tonsils or adenoids can be ascribed to the same superficial effect of ultraviolet rays.

CONCLUSION

In spite of systematic exposures to the radiations of the carbon arc lamp, no comparative diminution in the incidence of respiratory infections was noted in a series of infants treated for a period of three months.

Growth in weight and in height during the first six weeks was greater in the irradiated than in the nonirradiated group of infants. During the second six weeks, however, growth was less among the irradiated infants. These results coincide with those obtained last year with the mercury vapor lamp. The number of erythrocytes and leukocytes did not seem to be affected by irradiation. An increased percentage of polymorphonuclear cells was observed among those of the irradiated group during the first and second periods. The hemoglobin percentage of the irradiated group was maintained during the first period, whereas a fall of 12 per cent was noted in the nonirradiated group. Irradiation apparently had no influence on the size of the spleen, liver, tonsils, adenoids or cervical glands. In spite of repeated exposures to the rays of the carbon arc lamp, the pigmentation of the skin was slight, in contrast to the marked tanning which resulted from subsequent exposure of only a few days to the sun.

Table 5.—*Effect of Irradiation on Growth in Weight (Average)*

	Preirradiation Period		Irradiation Periods				Postirradiation Period (3 to 4½ Months)	
			I (0 to 1½ Months)		II (1½ to 3 Months)			
Number of Children	Age Mo.	Weight Lb.	Gain Lb.	Weight Lb.	Gain Lb.	Weight Lb.	Gain Lb.	Weight Lb.
Nine irradiated	9	17	18.9	1.9	19.2	0.3	0.4	19.6
Ten nonirradiated	8	17.2	18.7	1.5	19.6	0.9	0.8	20.4

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[8] Springer, M., and Tardieu, A.: De l'action des rayons ultraviolets sur la croissance, Bull. Acad. de méd., Paris **95**: 394-398 (April 20) 1926.

[9] Hess, A. F.: Use and Misuse of Ultraviolet Therapy, New York State J. Med. **26**: 816-819 (Oct. 1) 1926.

[10] Jolly, J.: Action des rayons ultraviolets sur le tissu lymphoïde, Compt. rend. Soc. de biol. **93**: 999-1002 (Oct. 30) 1925.

Medicine and Science.—The scientific worker is not confined to laboratories: it is the spirit and not the place that makes the scientific man. Every practitioner of medicine may be, and should be, a *scientific man doing just as much* to advance knowledge as any worker in a laboratory. In fact, it is the man in practice who so often starts the hare, finds the problem to be solved, and the credit of the hunt is his, although he may call on his physiologic and pathologic colleagues to help him in the chase.—Paton, D. N.: *Edinburgh M. J.* **35**: 6 (Jan.) 1928.

REGURGITATION OF ENDOMETRIAL TISSUE THROUGH FALLOPIAN TUBE DURING OPERATIVE PROCEDURES

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The etiology of endometriosis has caused more speculation during the past few years than any other gynecologic condition The origin of these heterotopic growths of endometrium becomes more important each day as an increasing number of reports reveal that they are quite a common lesion in the female pelvis and occur usually during the reproductive age

Sampson[1] recently reported observations based on 257 cases occurring in his private practice during the past four years This author[2] states that evidence of misplaced endometrial tissue can be demonstrated in from 10 to 20 per cent of women between the age of 30 years and the menopause who come for the operative relief of gynecologic conditions

The most widely accepted theory is that advanced by Sampson[3] of the regurgitation of tubal and uterine epithelium through the fallopian tubes into the free pelvic cavity He was able to demonstrate[4] these epithelial cells and bits of free lying epithelium and stroma identical with that found in the uterus in blood collected from the fimbriated ends of the tubes during laparotomy In eight out of fourteen cases in which the laparotomy had been preceded by a dilation and curettage, smears taken from the tubal extremity revealed epithelial cells He has also found carcinoma cells in the tubal lumen following diagnostic curettage for carcinoma of the body of the uterus

Novak[5] has questioned whether a piece of endometrial tissue could be regurgitated through the minute, often tortuous interstitial portion of the tube or whether it could pass to the pelvic cavity against the ciliated current of the tubal epithelium He feels rather that the ectopic endometrium found lying free in the tubal lumen or at the tubal fimbria consists of cast off bits from intrapelvic endometriomas or cancer that are being propelled toward the uterine cavity, and that these endometrial islands are primarily the result of a metaplasia of the tissue arising from the embryonic coelomic epithelium

Cron[6] has more recently shown that the endometrium cast off during the menstrual period can be grown on appropriate mediums He was not able to demonstrate, however, an increase in the mass which he felt might be due to too low a cellular concentration The reports of Heaney,[7] Danforth,[8] Lemon and Mahle[9] and many others would indicate that this cellular concentration is not such an important factor but that some as yet unknown condition will allow the growth of rather minute particles of endometrial tissue in points distant from the uterus

Geist and Goldberger have measured and visualized with the roentgen ray the interstitial portion of the fallopian tube They[10] found that the lumen varied from 0 5 to 1 mm in diameter These experiments, however, were carried out on the extirpated uterus and it seems probable that the lumen would be somewhat larger than this or at least more distensible in its usual uncontracted state

Ectopic endometrial transplants are quite frequently associated with conditions that might increase intra-uterine pressure and consequent regurgitation Davis and Cron[11] have reported a case which seemed to indicate quite definitely that an increase in intra-uterine pressure may force bits of endometrium backward through the tube to become implanted on the pelvic peritoneum

In my operative work I often precede laparotomy by dilation and curettage alone or combined with a tubal patency test The dilation of the cervix is accomplished with Hegar's solid dilators It occurred to me that I had an excellent opportunity to recheck some of Sampson's observations and demonstrate to my own satisfaction that endometrial tissue could be forced backward through the tubes into the pelvic cavity during the ordinary gynecologic operation

In these patients, as soon as the abdomen was opened, the fimbriated end of both tubes was smeared across a glass slide before any other manipulation was carried out in the pelvis In a series of sixteen cases, twelve revealed macroscopic blood, and in one additional patient a few blood cells were found on microscopic examination

The slides were allowed to dry at room temperature and then were stained with the ordinary eosin-hematoxylin stain In six of these slides clumps of cell debris and areas of definite epithelial cells could be found In a recent case in which dilation and curettage preceded the laparotomy for correction of a retroversion of the uterus, a piece of tissue appeared on the slide about 3 mm in diameter A careful search was made for endometrial transplants in the pelvis of this patient but none were found Operation was performed midway between menstrual periods In order to be sure of preserving the structure of this tissue, it was embedded and sectioned It proved to be a piece of normal endometrium very similar to that which one might obtain on curettage The gland spaces were rather widely dilated and contained a pink staining coagulum and many white blood corpuscles The stroma was quite edematous and also contained many leukocytes If staining properties are an index of the viability of tissue, this would seem to be a nidus which, if implanted under proper conditions, might have the possibility of future growth

Jacobson,[12] in his experiments on rabbits and monkeys, concludes that there is an increased viability of endometrium during estrus He feels that if endometrium is implanted on intra-abdominal structures that have been prepared by injury or irritation for the reception of ectopic cells, they will grow and probably reproduce their kind

It may be concluded, then, that in view of the clinical and experimental evidence any operative procedure that increases intra-uterine pressure may displace endometrium into the peritoneal cavity

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[1] Sampson J A Am J Obst & Gynec **12** 459 (Oct) 1926

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[5] Novak Emil Am J Obst & Gynec **12** 484 (Oct) 1926

[6] Cron R S and Gey G Am J Obst & Gynec **13** 645 (May) 1927

[7] Heaney N S Am J Obst & Gynec **10** 625 (Nov) 1925

[8] Danforth W C Am J Obst & Gynec **10** 630 (Nov) 1925

[9] Lemon W S and Mahle A E Ectopic Adenoma Arch Surg part 1 **10** 150 (Jan) 1925

[10] Geist S H and Goldberger M A Surg Gynec Obst **41** 646 (Nov) 1925

[11] Davis C H and Cron R S Am J Obst & Gynec **12** 526 (Oct) 1926

[12] Jacobson V C Autotransplantation of Endometrial Tissue in Rabbit Arch Surg **5** 281 (Sept) 1922 Intraperitoneal Transplantation of Endometrial Tissue Arch Path & Lab Med **1** 169 (Feb) 1926

Under proper conditions, endometrium that has been displaced may continue to grow and produce clinical symptoms which often require surgical intervention

Until the conditions necessary for implantation and growth are more fully understood, uterine manipulation should be done with extreme care and every effort should be made to evaluate the various factors in their order of importance

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THE DIAGNOSIS AND RESULTS OF SURGICAL TREATMENT OF MALIGNANT GOITER *

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The excuse for presenting so small a series of cases is found in the absence of mortality in dealing with a condition in which a high death rate usually has been reported, and the long duration of cure in several cases With the exception of recent publications from the Mayo Clinic, only small series of cases by individual operators or collections from the literature have been published Wilson[1] attributes this to the reluctance to report cases in which the diagnosis has usually been incorrect and the treatment futile This seems unfortunate, for there are many controverted questions concerning all points in this important subject, and reports of experience and further discussion should help

IMPORTANCE AND FREQUENCY

Malignancy is not only the most difficult problem but one of the greatest causes of mortality in goiter surgery Probably death results in at least 50 per cent of the cases of malignant goiter, while with benign goiter it is a fraction of 1 per cent in the hands of experienced operators The frequency of occurrence in all cases of goiter is variously estimated, Balfour[2] gives 1 19 per cent, De Courcy,[3] 1 75 per cent, Speese and Brown,[4] 4 6 per cent, and Simpson,[5] 4 per cent If the smallest figure is accepted, there would be at least as great a mortality with the malignant as with the benign cases, while with the larger figures there is 2 per cent or more mortality from the total number of goiters even when the relatively low frequency is considered This is about four times the mortality from goiter surgery as a whole, except in the hands of occasional operators

WHAT GOITERS ARE MALIGNANT

Numerous writers have called attention to the fact that apparently simple colloid goiter, of microscopic structure that generally remains harmless for years, may give metastasis of a malignant character Ewing[6] states that this was first described by Cohnheim, who found the structure of colloid goiter in both primary and secondary tumors, and he mentions such reports by eight other writers Delannoy and Dhalluin[7] report such a case from the clinic of Professor Lambret of Lille and give a review of the entire literature, especially complete from French sources, up to November, 1921 They consider the biologic and clinical character of growths the most important criteria of malignancy and also call attention to the frequent penetration of vessel walls Seventy-one cases had been reported in the surgical literature up to the time their paper was written In these supposedly benign growths with metastasis usually only a small piece of the tumor had been examined, and they believe that such fragments frequently fail to contain the localized focus of malignancy It is not generally practicable to examine an entire specimen histologically, but serial sections covering different parts frequently show malignancy as in their case They consider metastasizing goiter always malignant even if the small latent focus is overlooked They propose the name "cancers thyroidiens latents a metastases" for such growths and emphasize the importance of examining the thyroid in all malignant growths of bone suspected of being metastatic Graham,[8] in discussing this subject, states that a diagnosis can be made with confidence from cell and tissue morphology in only 30 to 40 per cent of cases, in the remaining cases, the microscopic appearance of the tissue cannot be relied on "Malignancy depends upon the tendency or capacity of the tumor to invade locally, cause local destruction, recur after operation, give distant metastasis and finally to result in the death of the patient"

DIAGNOSIS

Early diagnosis is the most important consideration, as in malignant conditions of all parts of the body The need for differentiation from other pathologic conditions or new growths in the neck is extremely rare The diagnosis of benign from malignant goiter is called for almost daily in clinics where many goiters are seen and frequently offers great difficulties Questions such as the following constantly arise Can the large, relatively symptomless goiter which has been carried for from twenty to forty years without trouble, but which has recently begun to increase in size, be safely left? Is the hardness of the longstanding growth in the neck of a man who has recently lost many pounds, the result of calcareous infiltration or an inoperable malignant condition? Does the insignificant-looking, hard little nodule in the neck of the young woman warrant opera-

Summary of Observations

	Malignant %	Benign %
Age Incidence		
1 o 20 year	5	12
20 to 30 years	10	32
30 to 40 years	25	21
40 to 50 years	15	15
50 to 60 years	35	11
60 years and over	10	9
Sex	About 1 male to 4 females	About 1 male to 8 females
Loss of weight	Only 1 (5%) lost over 20 pounds	10% lost 30 pounds or more (mostly toxic cases)
	52 patients lost 40 pounds or more	
Duration (since first observed)	14 over 5 years 8 over 10 years 5 over 20 years	
Mobility	Malignant	Benign
Free	25%	36%
Some limitation	25%	40%
Fixed	50%	24%

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* Read before the Section on Surgery General and Abdominal at the Seventy Eighth Annual Session of the American Medical Association Washington D C May 20 1927

[1] Wilson L B Cancer of the Thyroid Ann Surg **74** 129 (Aug) 1921

[2] Balfour Collected Papers of the Mayo Clinic **10** 374 1918

[3] De Courcy J L Malignant Tumor of the Thyroid Ann Surg **80** 551 (Oct) 1924

[4] Speese J and Brown H P Jr Ann Surg **74** 684 (Dec) 1921

[5] Simpson B T Surg Gynec Obst **28** 153 (Feb) 1919

[6] Ewing Neoplastic Disease ed 2 Philadelphia W B Saunders Company 1922 p 903

[7] Delannoy E and Dhalluin A Arch franco belges de chir **25** 1047 (Sept Dec) 1922

[8] Graham Allen Surg Gynec Obst **39** 781 (Dec.) 192

tion? These and similar questions are being asked not only of the family physicians but of the staff members of our teaching hospitals, and the answer is not always easy nor is the correct answer always given As practically all data concerning the diagnosis of malignant goiter are also common to benign growths, it has seemed that a comparison of the relative frequency of the symptoms and pertinent facts in the clinical history of the benign and malignant groups might be helpful Most writers have given their attention to the differential diagnosis from other pathologic conditions in the neck, but the diagnosis between benign and malignant goiter is nearly always more difficult and far more frequently needed For convenience in calculating percentages 1,000 unselected cases have been taken and compared with twenty malignant cases representing the approximate proportion in my recent experience, or 2 per cent This is only a small number selected from more than 5,000 cases observed in the last twenty-four years, the first small series having been reported in 1907,[9] but it represents recent and better operative methods It seems unlikely that this indicates the relative proportion between benign and malignant cases, for probably only a small proportion of patients with goiter consult the surgeon, but it does perhaps represent about the proportion seen by the average surgeon in this country

AGE

The relation of age to malignancy in my experience is shown in the accompanying table While the highest percentage is found in individuals over 50 years of age, as is agreed by practically all writers on this subject the number of patients between 20 and 40 years of age seems to be increasing Formerly, I should have agreed with Crotti[10] that malignant degeneration occurs mostly between the ages of 40 and 60, but during the last six years more than a third of the cases occurring among my patients have been in individuals under 40 years of age This may be the result of keener diagnosis, but statistics of the American Society for the Control of Cancer show definitely increasing frequency Small growths occurring in patients of about 30 years or younger have especially interested me recently These have been so small as to seem scarcely worth considering, but as they had the characteristics of a malignant growth, being fixed, hard and nodular, and in one instance causing hoarseness, they were excised and were reported as malignant by experienced pathologists This is a much higher percentage of malignancy among young persons than has been reported by most writers, although definite figures have not usually been given Wilson reports a preponderance in the fifth decade Crotti mostly from 40 to 60 years, and Muller and Speese,[11] in the fourth, fifth and sixth decades Bouman[12] gives a table of 290 cases showing twenty-four under 30 years of age Operation in young patients with small growths is so free from risk that early excision seems advisable in all doubtful cases

SEX

Women are much more frequently affected with goiter of all types, the number ranging in our yearly tabulation from one man to seven women to one man to ten women, the average being about one to eight The total number of malignant goiters is also greater in women, but the proportion from an equal number would be almost exactly twice as many men with malignant goiters as women As shown in the table, the proportion is one man to eight women in benign cases and one man to four women in malignant cases, indicating that of an equal number of goitrous men and women the men are about twice as likely to develop a malignant condition This is a higher proportion of malignancy than the experience of most others, Balfour[2] reporting 65 to 35 Wilson,[1] 69 to 31, Muller and Speese,[11] 60 to 40, and Delore[13] 4 to 1 It seems possible that the greater relative frequency in men has not been sufficiently emphasized

GENERAL MANIFESTATIONS

Weight—Rapid loss of weight occurring in a patient with a previously symptomless goiter and accompanied by other symptoms is always suggestive of malignancy however, the loss of weight in hyperthyroidism is very much greater than in malignant conditions In none of my malignant cases has there been loss of weight of more than 50 pounds (23 Kg), and in only one more than 20 pounds (9 Kg), while among 756 hyperthyroid cases in which the data were recently tabulated there were fifteen in which there was more than 50 pounds loss of weight Not infrequently there are instances of fleshy individuals who have lost 75 pounds (34 Kg) or more Only one patient with a malignant goiter had lost more than 20 pounds while 10 per cent of those with benign goiter had lost 20 pounds and thirty-two patients had lost more than 40 pounds (18 Kg)

Fixation of the Growth—This is more than twice as common by percentage in malignant as in benign cases, although deeply located, benign growths, and especially those that have been treated by injection or by roentgen-ray, are sometimes quite immovable

Hard Growths—Taken as a whole, hard growths are 30 per cent more common in malignant cases, but the incidence of calcareous infiltration is at least five times greater than that of malignancy and calcareous infiltration gives a hard growth which in most instances is indistinguishable from malignancy before operation unless other symptoms are present In the patients with hard nodules from calcareous infiltration and loss of weight from hyperthyroidism it is difficult to differentiate the condition from malignancy, but the roentgen ray makes the diagnosis clear in most cases Thick walled cysts and hard adenomatous nodules in some cases are difficult to distinguish from malignant growths Chronic thyroiditis is also difficult or impossible of differentiation from malignancy in certain cases Kraus[14] states that the differential diagnosis in such cases is most difficult

Difficult Respiration—This is mentioned by most writers as an important symptom of malignancy, but in my experience it is approximately as common in benign as in malignant growths It is so frequently caused by hard nodules pressing on the trachea, and especially by deeply located and intrathoracic growths, that I have found this symptom of itself of little help

Difficult Swallowing—This condition is twice as common in malignant as in benign cases, and is frequently one of the earliest indications of malignancy It seems to be a much more significant symptom than difficult respiration Pressure of the growth is not always the cause, for in several of my cases the growth was small and not located so as to give pressure Klose and Hellwig[15] believe that it is caused by an attachment to the esophagus Stenosis of the esophageal (or tracheal) lumen has been found to be rare, and bougies may be readily passed, as noticed by Kraus[14]

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[9] Tinker, M B Am J M Sc April 1907
[10] Crotti Thyroid and Thymus Philadelphia Lea & Febiger 1918
[11] Muller and Speese Univ Pennsylvania M Bull **19** 74 1906
[12] Bouman H A H Minnesota Med **3** 105 (March) 1920
[13] Delore quoted by Craver L F Ann Surg **82** 837 (Dec) 1925
[14] Kraus F Med Klin **20** 523 (April) 1924

Hoarseness—It is a well known fact that paralysis of one vocal cord with goiter is relatively common De Quervain[16] places the incidence at about 31 per thousand But this does not nearly always cause hoarseness If hoarseness develops, with small, fixed, hard, nodular growths, it is quite suggestive In this series it is 10 per cent more frequent in malignant than in benign cases Early hoarseness has also been noted by Balfour and a number of others

Local and Referred Pain—Such pain is approximately equally common in benign and malignant cases It has not seemed to me of great diagnostic value, although it is emphasized by Kraus

Immediate Results—There has not been any immediate operative mortality in this series although frequently the operations have been long and difficult because of extensive adhesions and involvement of closely related, important organs Freedom from heavy mortality has been obtained by abandoning any attempt at radical excision as soon as it was evident that the great vessel sheath trachea or esophagus was infiltrated by the growth The common carotid artery was resected in only one case of carotid gland tumor involving the thyroid by extension In almost all cases it was possible to remove the great bulk of the growth, leaving a thin strip where important structures were infiltrated to be taken care of by postoperative radium treatment Two of my patients who have lived longest (ten and fourteen years) following the primary operation have been treated in this way, and several others are living and apparently well for shorter periods Extensive secondary operation for metastasis to the lymphatic glands of the neck was performed in two patients, radium was used postoperatively in both, and both survived the secondary operation One lived seven years, dying from causes unknown to the physician who referred him to me, the other patient is living and well six years after operation Of twenty patients, all but one who was given radium treatment only, were operated on All patients but two were living one year following operation, but in a high percentage the condition will doubtless eventually recur Three other patients were under observation, all with metastatic growths which seemed too hopeless to justify treatment, these patients died within three months of the time first observed

POSTOPERATIVE RADIUM TREATMENT

The results of postoperative radium treatment have been extremely encouraging in a number of instances Infiltration of the great vessel sheath, the trachea and the esophagus was found in at least four instances These patients were given radium treatment as soon as possible after operation, and they have lived, one fourteen years, one eight years, and two three years It seems certain that this would not have been possible without the use of radium Radium alone gave an apparent cure in a case considered hopelessly inoperable in which the patient died from other causes three and one-half years later

It seems doubtful whether radium alone would prove as efficient in cases of extensive involvement as when the bulk of the growth is excised and radium later applied In many instances, too, there is no suspicion of malignancy until the operation is well under way, or when the report of the microscopic examination is received It should do no harm in experienced hands and its use after operation is advised in all cases In my cases there has not been any permanent recovery following the use of the roentgen ray combined with surgery, although several patients have been treated by competent roentgenologists the use of radium in inexperienced hands has been equally unavailing There is still much difference of opinion as to the permanent value of radium and a good many unconvincing papers have appeared, but careful and conservative reports such as that of Craver[17] from the Memorial Hospital, are certainly highly encouraging

PERMANENT RESULTS

Eight patients have been well three or more years after operation, four, five or more years, and three, six years afterward One patient is living and well fourteen years after operation One lived ten years and died from an unknown cause It seems highly improbable that most of these patients would have lived three or more years without operation, and even if the cure is not permanent the extra years of life are frequently very valuable, particularly when the patient is the mother of a family of small children

CONCLUSIONS

1 Malignant goiter hardly seems to deserve so pessimistic a prognosis as has been given by some writers Even with lymphatic gland involvement or extensive infiltration of surrounding important structures, the patients may survive for many years, while with early operation the results compare favorably with many other forms of malignancy

2 Thyroid growths in young adults, so small that some have not been thought worthy of serious consideration, if fixed, hard, nodular and of rapid growth and especially if there is beginning hoarseness and obstructive symptoms, have proved malignant in more than half the cases in which the growths were excised

3 Extensive operations do not seem justified when the favorable results of radium following partial excision are considered Too radical surgery undoubtedly accounts for the high death rate reported by most writers The postoperative use of radium in experienced hands has given some remarkably good results the roentgen ray and radium in inexperienced hands have proved of little value

4 Most of the usual symptoms and signs of malignancy may be present in benign goiters, and an early positive diagnosis is usually impossible With an incidence of malignancy in all goiters of at least 2 to 4 per cent, and high mortality, while thyroidectomy under favorable conditions has extremely low mortality, there can be little doubt that earlier operation in doubtful cases would mean still greater improvement in results

404 Savings Bank Building

[Editorial Note—This paper, together with that by Dr Else, entitled Regeneration of the Thyroid Gland and the Prevention of Recurrent Goiters, published in the issue of December 24, constitutes a symposium on the Surgery of Goiter The discussion followed the paper by Dr Else]

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[15] Klose H and Hellwig A Klin Wchnschr 1 1687 (Aug 19) 1922

[16] De Quervain Goiter New York William Wood & Co 1922

[17] Craver L F Ann Surg 82 833 (Dec) 1925

RELIEF OF CONGENITAL AND TRAUMATIC INCONTINENCE OF URINE BY OPERATION

REPORT OF SIX CASES *

OSWALD SWINNEY LOWSLEY, M D
NEW YORK

Incontinence of urine is such a social and economic handicap that the sufferer is indeed an object of distress This paper suggests a new procedure by which a young woman, who had suffered from incontinence since birth, was entirely relieved of her difficulty and has assumed the normal activities of the ordinary girl of her age for the first time in her life

Two widely different cases of congenital incontinence in men have also been cured by operation One occurring in a young man who had suffered from incontinence since birth was due to spina bifida and the other was a case of complete epispadias with incontinence In addition, three cases of incontinence due to traumatism were successfully treated by applying the same principle

RECENT OPERATIVE ATTEMPTS TO RELIEVE URINARY INCONTINENCE

Reports of surgical procedures undertaken to relieve incontinence of urine which have appeared during the past two years are characterized not so much by originality as by more intelligent and successful application of methods which were originated several years ago Gammeltoft[1] in Denmark and Baidin[2] in France have made use of the technic described by Goebell and Stoeckel as far back as 1910 It was thought that many cases of incontinence arose because of insufficiency of the function of the urethrotrigonal muscle, and that by "revivifying" this muscle incontinence could be abolished The method is especially applicable to females who suffer incontinence after pelvic operations or difficult labor Baidin reports that although in one of his patients the anterior wall of the urethra was much deteriorated and showed a urethrovestibular fistula, partial continence had been achieved, though as soon as the woman lay on her back, she once more lost control of urination Gammeltoft used the pyramidalis or rectus muscle to make a ring around the urethra, and restored control of the urinary function to a multipara who had lost it after an operation for cystocele

In our country, an ingenious variation on this technic is that of Deming,[3] who transplanted the gracilis muscle in a young woman who had congenital epispadias and who had undergone several unsuccessful surgical interventions previously The procedure consisted of carrying an incision downward from the pubic spine over the middle of the thigh, the deep fascia of which was then opened and the muscle traced downward well toward the knee The muscle has a double nerve supply and can easily be freed together with its vessels, so it is desirable to get as long a muscle belly as possible, and to incise it between two areas of nerve supply A catheter is inserted into the urethra and the proximal portion of the muscle is wrapped around it and sutured back on itself, being finally fastened to the undersurface of the pubic arch with 00 chromic catgut Daily bladder irrigations of 1 10,000 potassium permanganate solution were given, and the wound was painted twice daily with 1 per cent mercurochrome-220 soluble At the end of three weeks, the patient could walk without any loss of control, and by dint of exercises and patience she eventually became able to walk for two hours, and to dance and indulge in all the forms of exercise from which she had always been debarred, control being practically perfect

Urinary incontinence in women has received a great deal of attention from H D Furniss,[4] who recently made a report on the operative procedures which he is in the habit of employing to correct such causes of urinary leakage as fistulas, sphincter relaxation and aberrant ureters Ureteral fistulas may be to the skin, the ureters very frequently open into the vagina and very rarely into the bowel Operations on the ureter are sometimes followed by fistulas, and the condition is sometimes seen after labor or as result of extension from carcinoma of the cervix When due to clamping or too extensive dissection with subsequent necrosis, leakage is likely to be through the skin or vagina An unusual type of fistula is that following a nephro-ureterectomy, in which urine escapes from the bladder through the stump of the ureter, and thence by a sinus tract to the abdomen or vagina For the correction of a ureteral fistula two procedures may be considered ureterovesical anastomosis and nephrectomy Nephrectomy is the better procedure if there is marked renal injury, infection, and hydro-ureter or hydronephrosis, or in cases in which the upper segment of the ureter is far distant from the bladder, and in which there is marked exudate into the pelvis No attempt should be made to reach the field through the vagina, as this would constitute nothing more than an anastomosis between the sinus tract and the bladder, which would be sure to become infected even if the leak were temporarily stopped, and the kidney would certainly have to be removed later on

An extravesical opening of the ureter, of which Furniss has seen two of the thirty cases reported, may cause incontinence by opening into the urethra or vagina Treatment of such cases varies with the individual condition In cases in which a goodly amount of renal tissue is drained by a supernumerary ureter, and in which there is good function and no infection, ureterovesical anastomosis will give good results, an extraperitoneal operation being preferable When conditions are similar to these but very little renal tissue is drained by the extra ureter, a simple ligation will be satisfactory If the ureter and pelvis are dilated, infected or of little functional value resection will be the best procedure, and in Furniss's experience the great majority of cases come into this last class

Vesicovaginal fistulas are often complicated by urethral sphincter relaxation or urethral fistula General principles of the operative treatment of these sinuses are Good exposure of the field, if the vagina is too small the necessary enlargement may be secured through a pararectal incision on one or both sides The tissues should be so mobilized that the fistula edges may be approximated without tension Relaxation of

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* From the Department of Urology James Buchanan Brady Foundation of the New York Hospital

* Read before the Section on Urology at the Seventy Eighth Annual Session of the American Medical Association Washington D C May 20 1927

[1] Gammeltoft S A Incontinence Treated by the Goebell Stoeckell Operation Hospitalstid 69 169 (Feb 25) 1926

[2] Baidin A Intervention dans les cas d activite insuffisante du sphincter uerthro trigonal Compt rend Soc de biol 94 603 (March 12) 1926

[3] Deming C L Transplantation of the Gracilis Muscle for Incontinence of Urine J A M A 86 882 (March 20) 1927

[4] Furniss H D Urinary Incontinence in Women S Clin N Amer 5 249 (Feb) 1925

the vesical sphincter is, in my experience, the most frequent cause of incontinence in women Kelly's operation has proved an almost sure cure for cases of moderate degree In some women it has been possible to tighten the sphincter through a suprapubic incision, a procedure which should be reserved for those cases in which the Kelly operation cannot be done, that is, those in which there are very small vaginas, senile atrophy and excessive scar tissue around the base of the bladder

In the male, one of the frequent causes of urinary incontinence for which surgeons have sought a method of relief is that following perineal prostatectomy Keyes[5] last year described a procedure which was successful in restoring control to a man of 70 who had suffered complete incontinence for a year following perineal prostatectomy The perineum was opened in the old scar line and the rectum separated from the urethra, a search being instituted for some fibers of the external urethral sphincter None were found however, the only muscles to be seen being the cut and scarred posterior end of the bulbocavernosus, the edge of the intact levator ani on each side, and the rectum behind In order to bring pressure on the urethra, an attempt was made to suture the two levators together with the posterior part of the bulbocavernosus Three interrupted sutures of chromic catgut drew the three muscles together and made a muscular bed, the bulbocavernosus holding the two levators forward snugly under the membranous urethra, on which the natural tension of the levators gave an upward tug The sling thus formed closed the dripping urethra, and the patient's condition slowly but steadily improved, so that at the end of the year he was able to hold the urine half a day, and rose only twice at night Eventually he was able to sleep through the entire night, and there was absolutely no leakage at any time

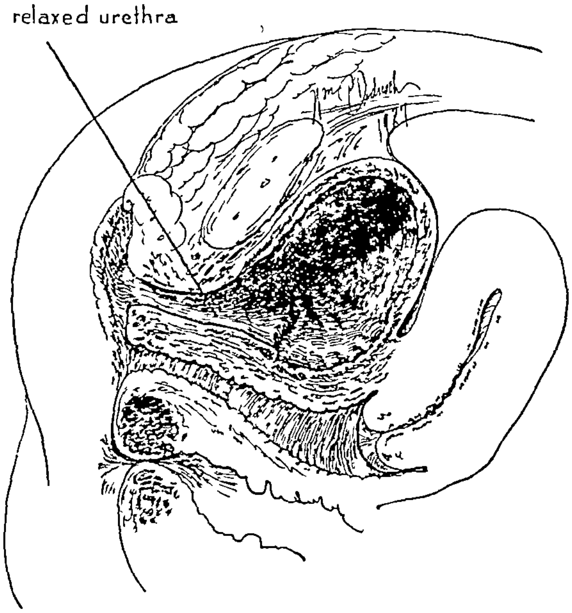

Fig 1 —Sagittal view of the bladder and urethra of a young woman who had suffered from incontinence since birth

Correction of the so-called essential incontinence of urine was accomplished by Delbet and Leri,[6] two French urologists, in a number of cases in which spina bifida was demonstrated by roentgen-ray examination Cutting down on the cleft in the spine, they found a fibrous band compressing the dural culdesac, the cauda equina and the adjacent nerves Resection and removal of this band in nearly all cases relieved the incontinence The operation is a delicate one, and is described in great detail In some cases, several compressing bands were found One serious feature of this procedure is that the scar resulting from the intervention may in its turn exert compression, thus causing a return of the previous incontinent condition In the cases that relapsed, this was apparently the cause of failure Out of twenty-four patients, however they had only three who were not benefited by the operation, and ever these three did not wet themselves so often at night, and were in many respects better off than if nothing had been done for them These authors report only three complete cures It seems probable to them that the anomalous condition of spina bifida may very likely be accompanied in these individuals by other anomalies, and that it may be that in some cases the incontinence may have another basis than the compression of the cords and nerves They are hopeful, however, that with improvements in technic a higher percentage of cures may be obtained in the future

REPORT OF CASES

The following operations resulted in the successful cure of congenital incontinence of urine in a young woman, a man and a boy

Case 1 —Miss V S, aged 28, admitted to the New York Hospital, March 3, 1925, with an irrelevant family history and a personal history of the usual diseases of childhood, and of regular painless menstruation of a twenty-eight day cycle and four day duration, had never been able to control the urine She did not lose so much urine while sitting except when she coughed, sneezed or laughed heartily, and during the first week following menstruation she had a little better control The control when she was lying down was slightly better, but when she slept she never had any control She had been treated by various physicians with vaginal tampons, catheterization and irrigation, and in 1912 she had had a vaginal operation for falling of the uterus, at which time sutures were placed in some location about the urethra in the hope of relieving the incontinence, all to no avail

The patient was well developed and well nourished, with several red moles of a seedy nature resembling an orange peel in appearance in various locations over the body There were no palpable glands, the rectal examination was negative, and the urethra had no muscular tone, as the forefinger could be inserted easily into the bladder without meeting resistance

An operation for relief of the incontinence was performed under sacral, parasacral anesthesia, which was entirely satisfactory for this operation, 1 per cent procaine hydrochloride without epinephrine being the medium employed Suprapubic block was employed for the first operation The operation was performed in two stages at the same sitting The first operation was a suprapubic cystostomy Suction with the double tube for bladder drainage was employed, so that the urine was kept from passing over the cut surfaces of the operative wound below A V shaped incision was cut out of the bladder neck at the first operation and there was much bleeding

The patient made an uneventful recovery and was discharged from the hospital, April 13, with the wound healed and able to control the urine for two and one-half hours

She was readmitted to the hospital, June 8, as her control had been greatly reduced and the sphincter was somewhat relaxed

The second operation was performed, June 8, another suprapubic cystostomy having been performed The patient was placed in the exaggerated lithotomy position A semicircular incision was made around the upper part of the urethral orifice and the entire upper and lateral surfaces of the urethra were dissected free from their attachments to the symphysis pubis and surrounding tissues This dissection was carried back beyond the vesical orifice The entire roof of the urethra and an inverted V shaped portion of the vesical orifice were dissected away The vesical orifice was then sewed tightly over a number 10 soft rubber baby catheter, as was also the entire urethra The latter, when repaired, was stitched tightly to the periosteum of the under surfaces of the symphysis, the orifice being joined to the cut surfaces of the skin The catheter was then removed and the patient immediately put on a suprapubic suction drainage, on which she remained for a period of three weeks The suprapubic wound was then allowed to heal, and the patient passed urine through the proper channel in due time A little exertion was necessary at first, but control has been excellent with no dribbling The patient was seen, May 11, 1927 (two years after operation), she reported that she went through the entire night without urination or dribbling and that during the day evacuation of the bladder was necessary at intervals varying from two to five hours, depending on the amount of fluids ingested, exposure to cold and other influences which affect the secretion of urine

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[5] Keyes E L Operation for Incontinence of Urine Following Perineal Prostatectomy Surg Gynec Obst 42 423 (March) 1926

[6] Delbet Pierre and Leri A L incontinence dire essentielle d urine Pathogenie et traitment chirurgical Rev de chir 63 483 1925

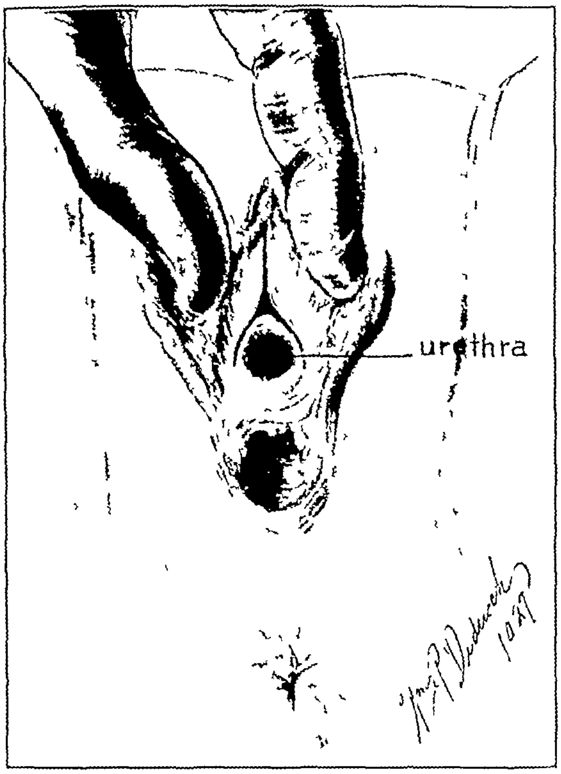

Fig 2—Repair of incontinence in woman Incision is made around the upper hemisphere of the urethra and extended to the symphysis the incision is then deepened and the upper surface of the urethra and the vesical orifice are exposed

Case 2—M W, a white man, aged 21, single, was admitted to the New York Hospital, Feb 9 1925, complaining of incontinence which had bothered him all his life

The family history was negative At the age of 2, the patient had been operated on for spina bifida, and stated that he had suffered all his life from incontinence, being compelled to wear a urinal night and day in order to keep dry Otherwise, his personal history was negative

The patient was well nourished and presented a normal physical condition save for a crescent shaped scar over the sacrum which marked the site of former operation during childhood The sacrum was irregular in outline and at the sacrococcygeal joint there was a nidus about one-half inch in depth, which did not show any evidence of infection The penis was bleached as a result of continual recent saturation in urine The meatus was red and inflamed, the scrotum and its contents were normal Rectal examination revealed no resistance such as is usually noted when the external sphincter is penetrated

On account of the abnormality of the sacrum, regional anesthesia was not used Suprapubic operation was performed in accordance with the usual method When the bladder was opened, incision was carried down into the posterior urethra, where a wedge shaped piece of tissue about one-half inch wide was resected This included the internal sphincter, which was brought together by continuous catgut sutures around a number 10 F catheter A cigaret drain was placed in the space of Retzius and the bladder closed in the usual manner with a double suction tube, sutured at the highest point of the bladder wound The abdominal wound was closed in layers, so that the tube passed obliquely through it, emerging at the highest point of the abdominal incision

The patient's wounds healed kindly, and after a short period of convalescence he was able to return to his ordinary duties

The patient was last seen, May 7, 1927, more than two years after operation While up and around he could hold the urine for only one and one-half hours, while sitting he could retain the urine without dribbling for from three to five hours, and while lying down he was able to remain dry the entire night without losing any urine On arising, however, he had to pass the urine promptly, otherwise he would dribble

This young man had gained 40 pounds (18 Kg), was successful in a business way, and had wooed and wed a beautiful young girl In other words, he had changed from a smelly object of pity to a stalwart young benedick.

Case 3—J L C, a boy, aged 6, admitted to the New York Hospital, May 3, 1922, with complete epispadias and incontinence, had worn a diaper all his life as he soiled himself constantly Otherwise the personal as well as the family history was negative He was well nourished and in a normal physical condition save for enlarged tonsils and malformation of the penis The testes and scrotum were normal Examination of the genital condition made under ether showed a completely relaxed urethra The corpora cavernosa were noted as a huge mass inferior to the urethra opening The latter consisted of a funnel-shaped passage opening into the bladder The foreskin consisted of a loose tab of skin lying underneath the corpora and without particular shape or form, being recognized on account of its consistency Both testes were descended and present in the scrotum There was no hernia

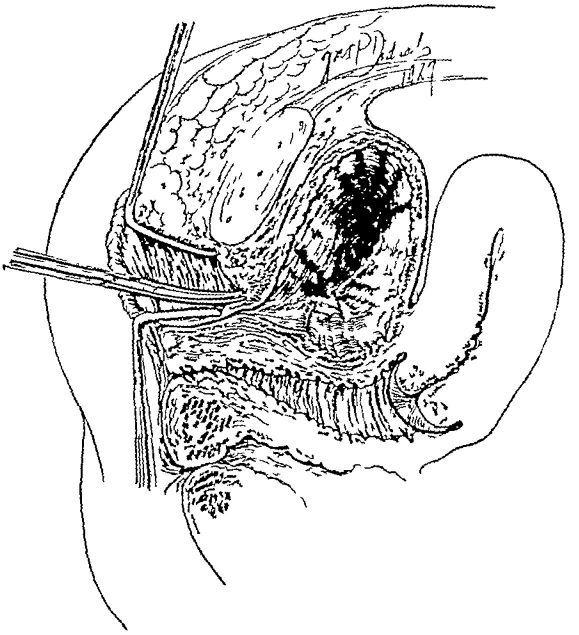

Fig 3—Sagittal view of the separation of the roof of the urethra from the surrounding structures

The patient was operated on under general anesthesia, a suprapubic cystostomy being performed. The bladder contained a small amount of urine. Digital examination of the bladder neck through the cystostomy wound showed it to be markedly relaxed, presenting roughly a triangular form, and the tip of the index finger could be easily inserted into the orifice. The bladder was mobilized anteriorly and freed up to the symphysis. The bladder neck was divided superiorly a wedge shaped piece being removed. Through and through sutures of chromic catgut were passed to tighten the internal sphincter around a small catheter. It was noted that the catheter could be withdrawn with difficulty, thereby indicating moderate constriction as a result of the procedure. The bladder was closed with suction tube drainage, and the patient returned to his room in good condition.

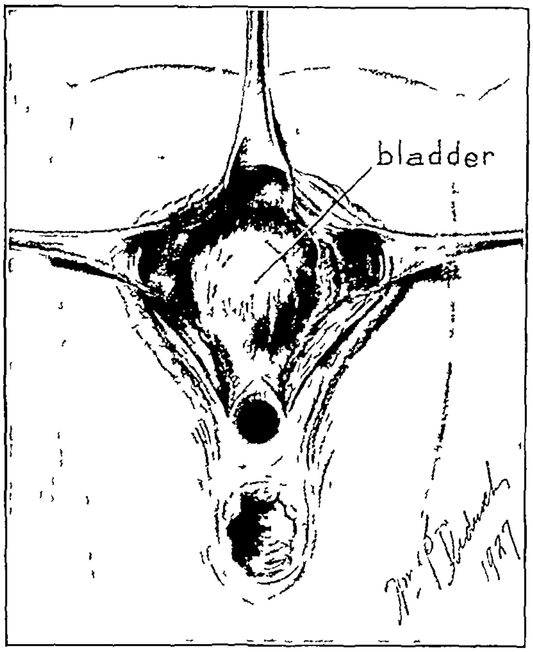

Fig 4.—Repair of incontinence in woman. The entire roof of the urethra and vesical orifice are exposed; the dotted line marks the area to be excised.

June 7, the patient was again operated on under general anesthesia to repair the congenital deformity of the penis. The suprapubic wound made at the previous operation was almost closed, and as the tube had not functioned satisfactorily following the previous operation, the cystostomy wound was enlarged and a tightly fitting tube sutured into the wound. The penis was then put on the stretch and the mucosa, which was represented by a long funnel shaped trough, the lower portion of which extended to the glans, was incised and blunt separation made between this mucosa and the tissues just inferior to the symphysis. This was stripped backward to a distance of 1½ inches until the external sphincter fibers, which were well defined, could be seen. These were tightened around the urethra in a crisscross fashion with sutures of plain catgut. A grooved director in the urethra during this procedure gave indication of the amount of tension and increased sphincteric action exerted by these sutures. The urethral mucosa on the lower aspect of the urethra was then separated at its most external portion from the underlying corpus cavernosum and denuded until the entire corpus could be picked up between the index finger and the thumb. Separation was partly accomplished on the opposite side, but at this point a moderate amount of union between the urethra and corpus was left intact in order to supply a vascularity to the newly formed urethra and urethral mucosa. The freed surface of the mucosa on the left side was then turned over a grooved director and united by sutures to the freed edge of the mucosa of the right side forming a canal for the urethra. This closure was effected for a distance of 2 inches. The corpora were then united superiorly over the newly made urethra by a layer of sutures, and after this the skin was pulled around the entire mass and sutured. A small dead space at the root of the penis just inferior to the symphysis was closed by buried sutures of catgut. A catheter was then passed gently into the bladder and found to meet moderate resistance throughout the entire urethra. It was then removed. The entire wound was cleaned with alcohol and a wet alcohol dressing applied to the row of sutures. This was reinforced with an overlying dam of rubber tissue which was sealed to the skin by collodion.

Following this operation some of the stitches in the upper portion of the wound did not hold and the corpora cavernosa suppurated, as did also a small portion of urethral mucosa. July 24, the suction tube was removed from the bladder, which was allowed to close. The patient was able to pass urine through the urethra and to void voluntarily. On account of a cough which the patient developed following the anesthetic, it was thought best not to attempt to repair the broken down area at this time; he was allowed to go home for three or four months and instructed to return at a future date to have the repair made.

He returned, May 24, 1924, and under gas and ether the edges of the sinus which had formed were freshened, and the underlying tissues were separated and closed with plain catgut sutures.

An important observation in this case was that the end of the repaired urethra broke down three times and remained intact only at the fourth operation, at which time the glans penis was split entirely into two parts. Healing then took place with equal pressure exerted at all points of the repaired surface where formerly the unexcised semilunar shaped glans penis exerted sufficient pull on the repaired upper portion, which included the repaired urethral end, to cause the terminal portion to break down from the pressure exerted.

The boy was seen in May, 1925, three years after the operation. He was then able to retain the urine all night long and for three hours while sitting. He remained dry for only one and one-half hours while playing, however, and often he forgot to urinate, at which times he would wet his trousers.

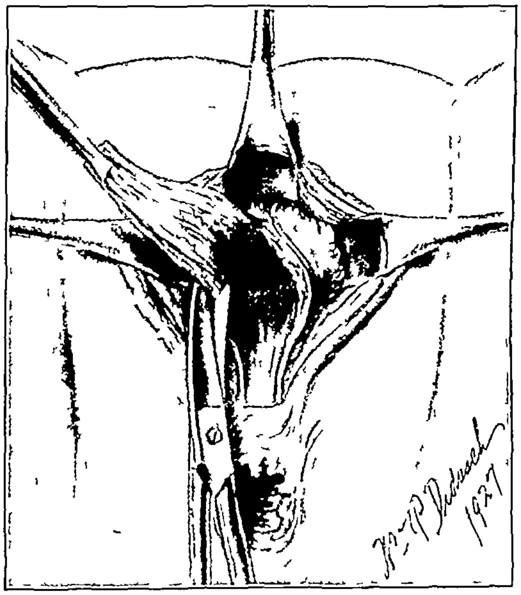

Fig 5.—Excision of the urethral roof and a wedge shaped piece of the vesical orifice.

A letter received from his mother in April, 1927, stated that he had shown gradual improvement in every way and that, while his urinary control was not perfect, he was able to conduct himself as a normal boy of his age should without dribbling if he passed the urine at regular intervals. If in romping with the other boys, he forgot to empty the bladder, he sometimes lost a few drops of urine in his trousers.

These three cases deal with congenital incontinence from three entirely different causes all cured by applying the same general principle Briefly expressed, the principle employed has been to narrow the natural sphincter areas to such a point that they function with the smallest amount of effort on the part of the patient and remain closed the rest of the time The same principle has been applied to three cases of traumatic incontinence of urine as follows

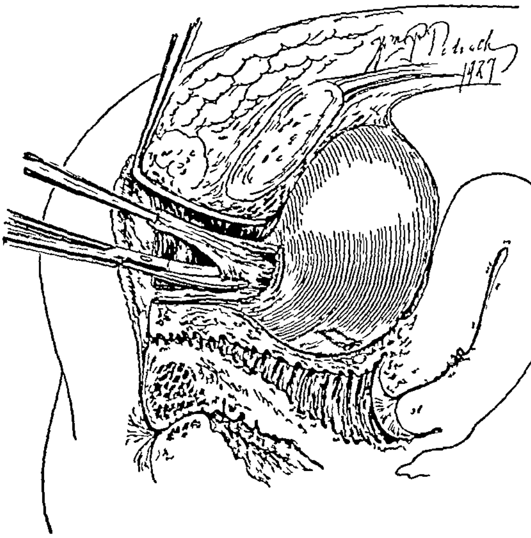

Fig 6—Sagittal view of the relations occupied by the excised urethral roof and vesical orifice

CASE 4—R J C, a man, aged 70, was operated on for carcinoma of the prostate at the New York Hospital, June 18, 1918, by the perineal route after the method of Young He recovered from the immediate effects of the operation and received several applications of radium He developed complete incontinence of urine after this operation, which was a source of great annoyance to him Nov 20, 1919, he was operated on for the relief of this condition Under general anesthesia the membranous urethra was exposed and dissected free The entire floor of the urethra was excised, the cut edges being drawn together around a number 10 F soft rubber catheter Plain catgut was used in two suture layers The patient made an uneventful recovery and was able to retain the urine for a period of about two hours He lived for about two years after his operation in comparative comfort, ultimately dying from metastases There was no recurrence of the carcinoma in the region of the prostate

CASE 5—Mrs A H, aged 20, came into the Brady Urological Foundation of the New York Hospital, Oct 26, 1925, complaining of incontinence of urine, which had existed since confinement seven months previously

The family history was negative, as was the personal history, save for one full term labor lasting thirty-three hours, which finally terminated in instrumental delivery At the time of delivery the patient was badly lacerated, the degree unknown, but the laceration was repaired at the time of delivery and she remained in bed for three months Following labor, the patient noticed that she could not control the urine especially when standing or walking, and sometimes when sitting There was, however, no lack of control when she was lying down This condition had not been constant but rather irregular and periodic She came to the hospital for surgical relief

She was well nourished and in normal physical condition save for a relaxed pelvic outlet, lacerated cervix and a slight cystocele The urethra showed a red meatus and a very much relaxed sphincter

Operation was done under regional anesthesia, 1 per cent procaine hydrochloride being used A suprapubic cystostomy was performed and a double suction tube sutured into the upper angle of the bladder for drainage The patient was then placed in the lithotomy position The urethra was carefully dissected, its roof being separated the entire length The dissection was carried beyond the neck of the bladder The roof of the urethra was then clipped away, starting at the meatus and cutting through into the internal vesical sphincter This having been done, two plain catgut sutures were inserted through the internal sphincter muscle to tighten it, and the urethra was sewed over a number 9 catheter The patient was returned to her bed in good condition The suction tube was removed from the cystostomy wound on the twenty-third day and the bladder allowed to close

About four days following the removal of the drainage tube from the bladder, the patient had a very good control of the urine, but on exertion would lose a few drops Nov 30, 1925, she was discharged from the hospital with the suprapubic wound completely healed and able to control the urine for from three to five hours It was also necessary to repair a small vesicovaginal fistula At present, this patient has excellent control of the urine She can retain it well without difficulty for five hours while actively up and about

CASE 6—In G L B, a man, aged 53, admitted, Sept 21, 1926, with enlargement of the prostate, a two stage perineal prostatectomy was performed and he was discharged, November 5 At this time, the family and past personal histories were negative December 24, he was readmitted with a diagnosis of chronic cystitis, and discharged without operation, December 27 He was admitted for the third time, Feb 28, 1927, because of incontinence of the urine A suprapubic cystostomy was performed and the external sphincter repaired

At the time of the first admission, because of an acute retention of thirty-six hours duration, the patient gave a history of frequent and difficult urination frequent catheterization, and three gonorrheal infections, resulting finally in acute retention Physical examination was negative except for a marked purulent urethral discharge, apparently a staphylococcus infection

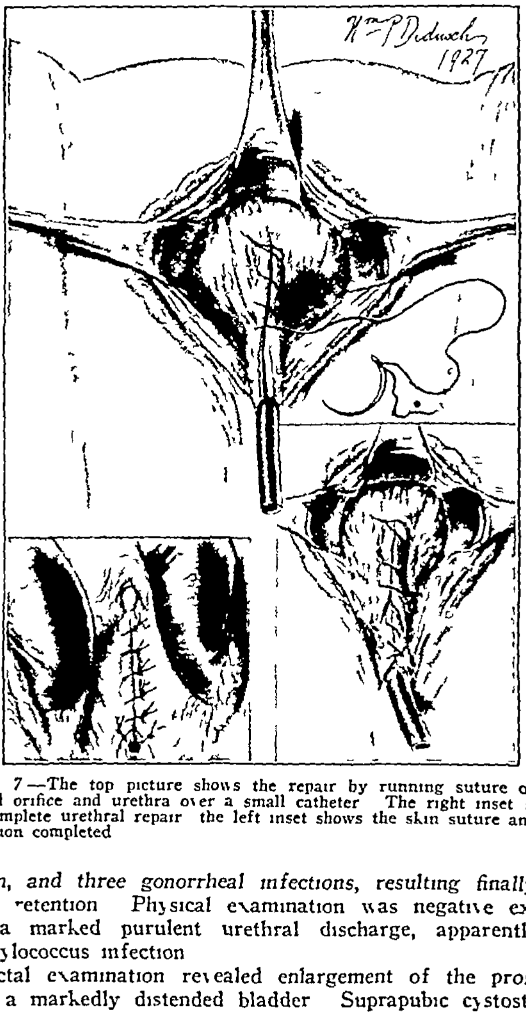

Fig 7—The top picture shows the repair by running suture of the vesical orifice and urethra over a small catheter The right inset shows the complete urethral repair the left inset shows the skin suture and the operation completed

Rectal examination revealed enlargement of the prostate with a markedly distended bladder Suprapubic cystostomy was done There was a domelike protrusion of the prostate in the bladder After a suitable period of suprapubic drainage, the patient underwent a perineal prostatectomy and the prostate was removed in the usual way The condition was found to be fibro-adenomatous hypertrophy of the prostate The patient made a successful postoperative convalescence and was discharged from the hospital forty-two days after admission

However, after leaving the hospital he returned every week for a long period It was found that his control was lacking Sounds and irrigations were of no apparent avail He was constantly in much distress and always wet because the penis was so small that it would not fit properly into the rubber bag There was constant saturation of the penis and scrotum Finally, he developed an acute hydrocele This subsided in a short time after the use of ice bags and suspensions, and he was admitted to the hospital and underwent a Young's punch procedure He was finally admitted to the hospital to relieve incontinence of urine

Suprapubic cystostomy was done and the bladder was drained by suction drainage At the same sitting a perineal procedure was done and the urethra was repaired by excision of the scar tissue and diminishing the size of the urethra by suturing the urethral edges around a small catheter This number 12, soft rubber catheter was removed after operation and sixteen days after operation a number 14 sound was passed with some difficulty

Results of Operation in Cases of Incontinence of Urine

Name and Date of Admission	Age	Diagnosis	Operations	Days in Hospital	Immediate Result	Final Result	Comment
Miss V S 3/3/25	28	Congenital incontinence of urine	Suprapubic cystostomy repair of urethra and vesical orifice	40	Excellent	Retains urine all night and for as long as five hours during day	Has become an economic and social asset
Mr M W 2/9/25	21	Congenital incontinence of urine and spina bifida	Suprapubic cystostomy and resection of wedge shaped piece of the vesical orifice	30	Excellent	Retains urine all night and for five hours while sitting for one and one half hours while walking	Has gained 40 pounds and is an economic success has been married recently
Master J L C 5/3/22	6	Complete epispadias and congenital incontinence of urine	Suprapubic cystostomy excision of wedge shaped piece of the vesical orifice repair of epispadias after the method of Young	90	Seven operations in all performed with ultimate success	Retains urine all night and for three hours while sitting one and one half hours while playing	Has grown a great deal and is improving gradually as he grows older
R. J C 11/19/19	70	Traumatic incontinence due to perineal prostatectomy	Excision of floor of membranous urethra and repair with resulting narrowness	12	Excellent	Had complete control until death two years later from metastases	Metastases did not occur at site of operation
G L B	53	Traumatic incontinence due to perineal prostatectomy for adenomatous enlargement	Suprapubic cystostomy excision of floor of membranous urethra and repair with resulting narrowing of urethra	16	Excellent	Control is excellent three months after operation	Patient reported to the hospital six weeks ago with complete retention which was relieved by passing a sound
Mrs A H 10/26/25	20	Traumatic incontinence due to prolonged instrumental delivery	Suprapubic cystostomy incision and repair of roof of urethra and vesical orifice	34	Excellent	Control excellent after repair of urethra vesical orifice and a small vesicovaginal fistula	Patient considers herself entirely cured can control urine for five hours while up and about

After being discharged from the hospital, he returned weekly for observation and the passing of sounds, and on two occasions came in with acute retention This condition was immediately relieved by the passage of a sound

COMMENT

By referring to the accompanying table, it will be seen that these operations have been performed on persons of various ages and for incontinence from a variety of causes The same general principle has been applied in all the cases In the first place, it is considered essential to divert the urinary stream This is best done by the use of a double suprapubic suction tube By means of this effective device the wounds are all kept thoroughly dry, and no urine is allowed to pass over the repaired urethra This is considered essential, as pressure of any sort and the presence of urine, especially if it is infected, are the two things which are most liable to cause necrosis of a urethral repair

The principle involved in the actual reconstruction of the sphincteric portion of the urethra is to make it as small as possible, so that the muscles of that structure will have the greatest possible opportunity to become effective as a sphincter Also it is considered that the surrounding muscular structures undoubtedly take part in the muscular control of the urinary channels in both males and females, therefore with the channel reduced in size, the minimum amount of exertion of muscular tone will aid in keeping it closed with resulting control

The results of the six operations described fully justify my expectations, and this type of operation is therefore recommended in cases of incontinence either congenital or acquired

32 East Sixty-Fifth Street

ABSTRACT OF DISCUSSION

Dr R. E Cumming, Detroit Dr Lowsley reported two cases of congenital incontinence that was due to epispadias, and one case in a girl who had always been incontinent and in whom no physical defect was found I wonder whether we all keep in mind the possibility of a perfectly normal incontinence of childhood, especially in the female, in association with such things as diseased tonsils or infection in various parts of the body, perhaps with an associated cystitis, lasting through adult life In reviewing the cases of acquired incontinence which I have had to study, not having many in which I could prove congenital incontinence, I found that we could prove the existence of other congenital factors, such as syphilis and tabes dorsalis Some years ago, Dr Young of Boston reported an operation by which he brought about a reconstruction of a muscular urethra by means of mattress sutures, and I think that in Dr Cabot's discussion of this paper he brought out, as Dr Lowsley did, the importance of getting the urinary stream elsewhere than through the urethra during the period of convalescence It seems to me this is the basic point on which the success of all such operations depends We are indebted to Dr Chute for calling attention to the importance of spina bifida occulta in these cases, particularly the indefinite ones I recall twelve such cases which I cared for while in the army It was a pitiful sight, as every morning the men had to line up and report whether their beds were wet the night before We got a history of definite mental deficiency in some cases, which goes back to the persistence of incontinence of childhood In one case the incontinence was purely acquired, secondary to exposure and an acute cystitis, followed by false incontinence In three

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7 Young, H H An Operation for Cure of Incontinence Associated with Epispadias, J Urol 8 361 429 (Nov) 1922

cases in which I thought operation was necessary because of loss of activity of the internal sphincter, I did part of the operation which Dr Hugh Young devised and Dr Lowsley mentions, namely, I denuded the trigon and created a false median bar In all three instances this was successful for a year or longer I then lost sight of the patients I should like to try this operation in the female to see whether one could secure a good result in the pitiful cases such as the one mentioned of the woman who had to wear a napkin throughout life

Dr D K Rose, St Louis One of the things that seem to have been left out in this discussion so far is the fact that the nervous system is a cause in the production of incontinence I have seen the same type in three generations, i e, incontinence (day and night) in which the bladder pressure is low although the capacity is large It is very difficult to do anything with such types In the other type of precocious girls with incontinence at night, we find a normal capacity with a high pressure In this type, treatment of maintained bladder pressure of 60 or 70 mm of mercury for five minutes, two or three times a week, will be of great benefit In the incontinence of tabes, one sees the results of destruction of the roots, or, in the meningovascular type, the result of irritation of the involved roots In the meningovascular type affecting the low cord, there is an imbalance between the perisympathetic and the sympathetic and, as it is a nerve of sacral origin which controls the mechanism of emptying the bladder, if irritated, there is, in accordance with the degree, either frequency or incontinence On the other hand, if the low cord is destroyed with the sympathetics in control, a paradoxical incontinence will eventually result This does not develop to the fullest extent immediately but goes through a stage of bladder wall decompensation during which time we may have the same night loss and a somewhat similar frequency to that shown early in the meningovascular type Spinal cord tumors, by their location, may cause various types of incontinence Kyphosis of the spine, with irritation above the ninth dorsal, will, during a certain stage of its development, produce an automatic bladder in which the loss will usually approximate from 200 to 300 cc

R. Campbell Begg, Wellington, N Z It is a curious reflection, I think, that during the last fifteen months I have performed this operation in two cases with resultant cure It is of particular interest to hear Dr Lowsley refer to aberrant ureters emptying into the urethra, and to spina bifida To my mind spina bifida occulta is a far more frequent cause of such a condition than we realize A year ago I encountered one of the aberrant ureters Knowing that cases had been reported and published in this country I looked up the literature and found eighty-six cases in which this observation had been made Of the men who reported cases quite a large number have reported two I have had two cases They commonly open into the urethra and vestibule but not into the vagina The ureter is carried down by the wolffian ducts In these cases there is often a dilated ureter which runs up under the vagina, and I think that these are the cases reported in the literature as emptying into the vagina In our whole literature in England, spina bifida occulta is unknown as the cause of all kinds of bladder dysfunctions In England and New Zealand we are apt to give more attention to the other portions than to the spine, as depicted by roentgenograms, and by giving more attention to the spine I think that we shall get much assistance One of my cases was in a youth who had been a bed-wetter for eighteen years There was no abnormality of the urinary tract detected cystoscopically but roentgen-ray examination disclosed a spina bifida occulta which could not be palpated I do not think that it ever can be palpated, but stereoscopic plates will show it In opening up we found a membrane passing across and obliterating the lowest part of the theca He had six lumbar vertebrae, and from the last of these a fibrous membrane passed to the cauda equina 2 inches above the lower end of the theca As is known, if one exposes the dura in this region one gets the pulsation transmitted from the brain, and in this case the marked thing was that there was no pulsation in the theca These nerves were not having their normal bathing in the fluid, but as soon as this membrane was released pulsation was reestablished The patient was put back to bed, and at 3 o'clock that morning he called for a bottle, and he has never wet the bed again according to the last report Dr Rose spoke of the innervation of the bladder, but I think that we have not discussed that topic fully yet To say that the action of the sympathetic opens the bladder and the parasympathetic does something else does not seem to cover the whole ground In this particular case of nocturnal enuresis, with good retention during the day, it was obvious that the hypogastrics were not having their physiologic blood supply because the dura was tacked down, this produced a condition of excitability that caused occasional bedwetting during sleep when the pressure of the bladder caused tension My experience with spina bifida occulta has been that it is distinct from spina bifida and has been passed over together with the fact that it can cause bladder and no other symptoms

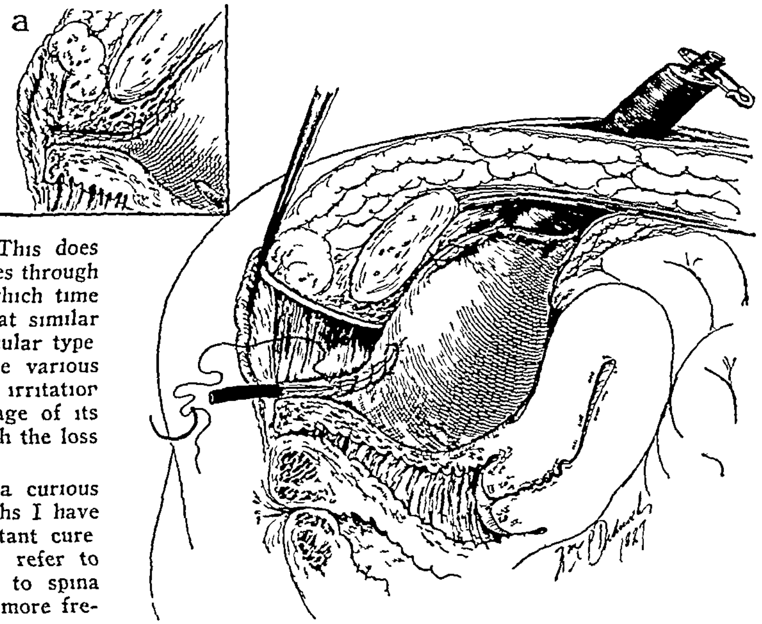

Fig 8—Sagittal view of the double suction drainage tube in place at the summit of the bladder for the purpose of diverting the urinary stream. The partial repair of the vesical orifice and urethra is shown Inset *a* is a sagittal view of the repaired urethra attached to the under surface of the symphysis pubis and of the external repair It will be noted that the vaginal surface of the urethra is never disturbed therefore there is no possible chance for the vaginal wall to become injured or the site of a urethrovaginal fistula

Dr O S Lowsley, New York One patient with spina bifida had been operated on when he was 2 years old by Dr George Woolsey, who removed the mass I saw him when he was 21 He had had incontinence all the time One case was a complete epispadias with incontinence, such as Dr Young several years ago reported and for which he devised his magnificent operation The third case was apparently without any cause that we could find The question of spina bifida occulta should not be overlooked In the navy we had a list of bed-wetters, and I found that a large majority of them were suffering from posterior urethral irritation, apparently produced by irritation of the prostate, because these lads had to sleep on their backs for the first time in their lives since one cannot sleep anywhere else in a hammock. This was apparently due to congestion of the prostate with the posterior urethra and they were cured by treatment of the prostate and the posterior urethra I was interested in Dr Rose's description of the influence of the nervous system on these conditions a most interesting and important consideration which should not be overlooked It is always a question what to do with these cases Dr Stevens of New York years ago recommended doing nothing unless the congestion of the bladder was so great that intervention was demanded I believe that Dr Plaggemeyer recommended that in the cases of cord disease the proper thing to do was to allow the bladder to overflow That is usually a good thing to do, and very often the cases that seem to be moderately advanced with tabes will be cured with antisyphilitic treatment That seems to be the first thing to try It was very important to all of us to have Mr Begg call our attention to the cases of spina bifida occulta, and we will certainly be on the lookout for them

ENTEROCOCCUS PERITONITIS

REPORT OF CASE IN A CHILD [*]

LEON DeVEL, M D
AND
ELMER L DeGOWIN, A B
ANN ARBOR, MICH

Parenteral infections with the enterococcus appear to have been rarely recognized in this country, and American bacteriologists are inclined to doubt the pathogenicity of this organism

In 1899, Thiercelin [1] described an organism which he considered a normal inhabitant of the human gastro-intestinal tract The germ was somewhat pleomorphic, sometimes appearing as a lanceolate diplococcus like the pneumococcus and sometimes as a "streptodiplococcus" looking like chains of diplococci He found this organism in small numbers in normal stools but it became very abundant in certain intestinal diseases, such as mucous colitis This author also isolated the organism from pus from the meninges in two cases of epidemic cerebrospinal meningitis He found it in pus from suppurating appendicitis He named the germ *Enterococcus*

Houston and McCloy,[2] working in an English base hospital in 1916, found the enterococcus in a variety of conditions which they classified into three groups of cases The first group they designated the "septicemic group" The patients in this group had septic temperatures for several weeks with other signs of generalized infection The enterococcus was isolated from the blood urine and sputum of many of these The second group consisted of cases diagnosed as "trench fever" Enterococci were obtained from the blood, urine and sputum of some of these Lastly, there was a "myalgic" group in which the same germ was often isolated These three groups were all treated with autogenous vaccines with good results in the first two groups

Tricoire,[3] in 1917, summarized the cases in which the coccus of Thiercelin had been found Of localized conditions, it had been reported in gastro-enteritis in children, in "intestinal grip," in mucous colitis in children, in infections of the biliary system, in appendicitis, in peritonitis with associated scarlet fever, in primary peritonitis, and in the blood of a patient with appendicitis In another group of cases which he called "enterococcemias with localization," the germ was found in such conditions as osteomyelitis, urethritis, respiratory infections, cardiovascular infections, arthritides and meningitis He also recognized primary septicemias as well as those secondary to such diseases as tuberculosis He considered vaccine therapy worth trying in cases which had been diagnosed bacteriologically

Most bacteriologists consider the enterococcus identical with the *Micrococcus ovalis* of Escherich and the *Streptococcus fecalis* of the English and American workers Most of the textbooks on pathogenic bacteriology in this country do not mention the organism at all, and such workers as Kendall and Haner [4] doubt that the organism is pathogenic Went,[5] in a recent article, also considers the organism nonpathogenic

In view of the more or less conflicting opinions on the pathogenicity of the enterococcus, we deem as worthy any additional information on the subject, such as the report of pertinent cases

REPORT OF CASE

B S, a boy, aged 6 years, was admitted to the University Hospital, Dec 13, 1926, complaining chiefly of "albuminuria" The family history was negative The child had had recurrent suppurative otitis media at 1 year, and later, measles, whooping cough and chickenpox

About a month before admission, the boy had occasional attacks of vomiting The vomiting ceased after two or three days Then the face, abdomen, legs and feet began to swell The urine became scanty and contained some albumin In the course of a week or ten days, the edema subsided gradually During this period there was urinary frequency The patient was kept in bed and received a diet consisting of fruit juice, milk and dry toast He did not complain of pain, but felt tired and short of breath Later, the puffiness of the face increased again, and he became more irritable

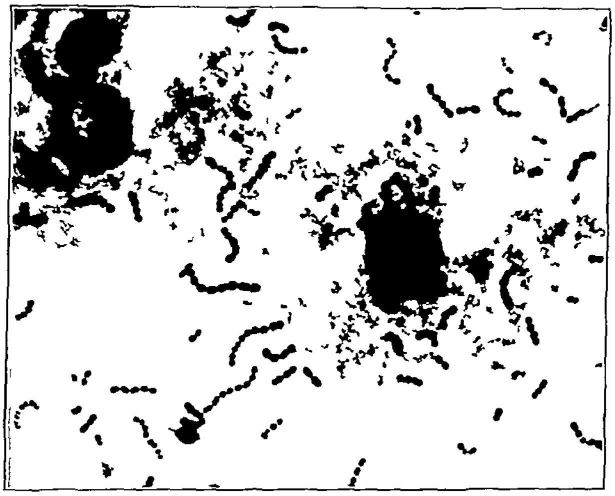

Fig 1 —Photomicrograph of peritoneal fluid obtained from child with peritonitis Attention is called to the lanceolate diplococci which occur separately and make up the chains Gram stain

Physical examination on admission revealed the following positive conditions striking pallor and puffiness of the face, large abdomen, flattened umbilicus, and no definite fluid wave or shifting dulness There were no other abnormalities The blood pressure was 92 systolic and 76 diastolic, the temperature, 99 2, the pulse, 90, and the respiration, 20

The urine showed albumin + +, a few hyaline casts, a few white cells, and no blood The specific gravity was 1 028 The urine concentration test and the phenolsulphonphthalein test were normal

A blood count showed erythrocytes, 4,400,000, hemoglobin, 92 per cent (Sahli), leukocytes, 10,400 with 72 per cent polymorphonuclears The Wassermann reaction was negative The nonprotein nitrogen was 41 4 mg per hundred cubic

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[*] This investigation was supported by a grant from the Merrill Palmer School Detroit

[*] From the Department of Pediatrics and Infectious Diseases University of Michigan Medical School

[1] Thiercelin Compt rend Soc de biol **51** 269 1899

[2] Houston T and McCloy J M Lancet **2** 632 637 (Oct 7) 1916

[3] Tricoire Progres med **32** 387 390 (Nov 17) 1917

[4] Kendall A I and Haner R C J Infect Dis **35** 67 76 (July) 1924

[5] Went Centralbl f Bakteriol, I Orig **100** 62 75

centimeters The urea nitrogen was 12 4 mg cholesterol, 708 mg, and serum protein, 5 56 per cent (refractometric) The basal metabolic rate was + 5 per cent (first determination) The child weighed 45½ pounds (20 6 Kg) The intradermal tuberculin test (0 1 mg) was negative

During the patient's first ten days in the hospital, the temperature remained normal The edema gradually increased, becoming most marked in the genitalia and lower extremities The ascites increased rapidly and the abdomen became distended On the eleventh day, the temperature was slightly elevated, reaching 105 F by the following day At the same time the abdomen became much more distended and the child began to complain of pain, spontaneous and on manipulation The tenderness was diffuse, involving all of the abdominal wall Abdominal paracentesis revealed a yellowish cloudy fluid, containing small flakes of fibrinous material, large numbers of polymorphonuclears, and numerous gram positive diplostreptococci These organisms were mistaken for pneumococci The leukocyte count at the time was 41 000 with 90 per cent polymorphonuclears The child was treated with pneumococcus antibody solution intravenously and intraperitoneally Death occurred five days later

Postmortem examination revealed subacute, diffuse streptococcus peritonitis and subacute, recurrent appendicitis with recent exacerbation There was cloudy swelling and fatty degenerative infiltration of the kidneys Lymphoid hyperplasia was present with marked exhaustion of the germ centers Areas of coagulation necrosis were noted in the mesenteric and retroperitoneal lymph nodes There was passive congestion and parenchymatous degeneration of all organs

BACTERIOLOGIC OBSERVATIONS

Altogether the abdomen was tapped four times in two days, and each time microscopic examination of the exudate revealed the same organism in large numbers The organism was isolated in pure culture from the first specimen of exudate Mr G H Chapman of the Clinical Research Laboratory of New York City suggested to us the identity of the germ A description of the germ would seem of some importance for the benefit of others who are confronted by the same situation

On rabbit blood agar plates, the organism forms discrete, round, convex colonies which appear quite transparent at the end of eighteen hours' incubation at 37 C but soon afterward become opaque and white when left at room temperature These colonies are about twice as large as the ordinary hemolytic streptococcus and do not have the compact, granular appearance of the latter The colony is surrounded by a zone of hemolysis At the end of forty-eight hours' incubation the colonies themselves measure about 0 75 mm in diameter, while the zone of hemolysis has a diameter of about 2 5 mm Most of the older writers deny the power of the enterococcus to hemolyze blood, but Orcutt[6] describes it as forming a green ring in blood agar and recently Gundel[7] reported that there are strains that produce the green ring and strains that hemolyze completely Our strain was found to be one of the latter type After a few transplants, the organism could be grown on plain agar as a very fine film which was transparent and looked like a film of dewdrops The germ grows readily on dextrose broth, in which medium it at first produces a uniform cloud which soon settles to the bottom as a fine granular precipitate, leaving a clear supernatant fluid

The morphology is interesting In the peritoneal exudate, the organism appears as a comparatively large, gram-positive coccus This coccus is lance-shaped like the pneumococcus and is arranged in pairs and in chains of from four to eight cocci The chains do not resemble streptococci because they are composed of diplococci joined together rather than a series of round balls We believe that this is an important point to be kept in mind when examining pathologic fluids microscopically These longer chains are not duplicated in artificial mediums, although shorter chains of two diplococci are often seen in broth As a rule, the germ grows in broth as a lanceolate diplococcus looking much like the pneumococcus The cocci from the agar plate are somewhat longer and narrower than in broth and have a decided tendency to arrange themselves in pairs with their long axes parallel Pleomorphism has not been noted to any important degree in our cultures We have never observed capsules either in pathologic fluids or in culture The organism is not bile soluble, thus being definitely separated from the pneumococcus

Dible[8] and Houston and McCloy[2] have emphasized the heat resisting properties of the enterococcus After a study of 152 strains of fecal cocci, Dible laid down the rule that if a coccus which was either a streptococcus or an enterococcus was found to survive exposure to 60 C for fifteen minutes, it was invariably an enterococcus Our strain conformed to this test, which was carried out in capillary pipets as used by Dible The strain also kills mice in eighteen hours when a suspension is injected intraperitoneally

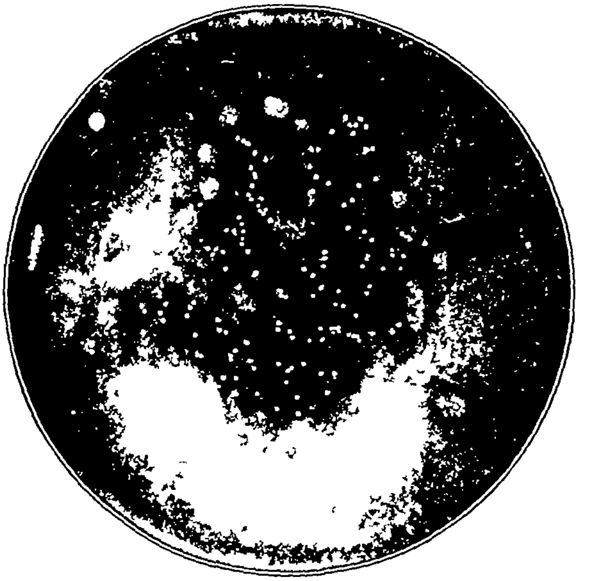

Fig 2—Blood agar plate culture showing white colonies with zones of hemolysis around them The colonies are opaque and quite convex a characteristic which is not shown well in the photograph Culture incubated twenty four hours at 37 C

COMMENT

The pathologist considered that the peritonitis in this case was secondary to an acute exacerbation of a chronic appendicitis This would account for the presence of an organism which is normally an inhabitant of the intestinal tract

This case is important in that it emphasizes the need for accurate diagnosis There can be no doubt that this condition could be diagnosed many times if laboratory workers were on the lookout for it The common mistake is, no doubt, the one that occurred at first in the case reported, namely, the tendency to regard the germ as an atypical pneumococcus on account of its morphology The possible presence of this germ should be considered in cases of so-called pneumococcus peritonitis and streptococcus peritonitis As quick a differentiating point as any from the laboratory point of view is the heat resisting character of the enterococcus, which Dible emphasized After having once seen the growth on blood agar, one should not have any difficulty in differentiating it from a streptococcus

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[6] Orcutt M L J Bact 11 129 139 (Feb) 1926
[7] Gundel Centralbl f Bakt I Orig 99 469-478
[8] Dible J H J Path & Bact 24 3 34 (Jan) 1921

UNILATERAL SYMPTOMS IN MENINGITIS *

ABRAHAM LEVINSON, M D
CHICAGO

The classic signs of meningitis, such as the Brudzinski, Kernig and Babinski, are usually bilateral When unilateral symptoms occur, one is often inclined to rule out the presence of meningitis and to think of brain abscess, brain tumor, encephalitis or poliomyelitis

I have encountered cases that manifested unilateral Brudzinski, Kernig and Babinski signs, in which the character of the cerebrospinal fluid, and, in some instances, the necropsy, proved the presence of a meningitis, either tuberculous, pneumococcic or meningococcic This shows that, although the classic signs of meningitis are usually bilateral, unilateral manifestations of meningeal irritation do not exclude the diagnosis of meningitis This knowledge is particularly important in the diagnosis of meningococcic meningitis, in which reliance on unilateral symptoms to exclude meningitis may lead to delay in the removal of cerebrospinal fluid and the administration of serum with consequent disastrous results

Unilateral manifestations during the course of meningitis may be divided into two types (1) intermittent unilateral manifestations, and (2) constant unilateral manifestations Each of these may be subdivided into two classes (*a*) late unilateral manifestations, namely, cases that start as typical meningitis with bilateral symptoms and manifest unilateral symptoms during the advanced stages of the disease, and (*b*) early unilateral manifestations or cases that start out with unilateral symptoms

LATE INTERMITTENT UNILATERAL MANIFESTATIONS

Case 1 illustrates the late occurrence of intermittent unilateral manifestations in tuberculous meningitis

Case 1—B D, colored, aged 19 months, entered the Cook County Hospital with a history of frequent colds and cough at irregular intervals for the past nine months One week previous to admission the patient had measles The patient's mother had died of tuberculosis, the cause of the father's death was unknown On entrance, the temperature was 100 F , subsequently it fluctuated between 100 and 103 daily Physical examination on admission revealed the classic signs of rickets, such as marked rosary, pot belly, umbilical hernia and enlarged epiphysis There were numerous moist and dry rales in both lungs, especially over the right lower lobe posteriorly There were no signs of meningeal irritation A mucopurulent discharge from the left eye was positive for Klebs-Loeffler bacilli and negative for gonococci The Pirquet test was positive and the blood Wassermann reaction was negative

About a month later, the child became drowsy and had a rigid neck, at which time the onset of meningitis was evident It was not, however, until several days later that the patient developed a paralysis of the sixth cranial nerve and unilateral Kernig and Brudzinski signs The unilateral phenomena were not constant, at times becoming bilateral The cerebrospinal fluid was under increased pressure, but was blood tinged and therefore could not be used as an aid in diagnosis

The roentgenogram showed nodular tuberculosis in both lungs

The necropsy, performed by Dr Paul Schmidt, revealed diffuse caseous and miliary tuberculosis of the brain and leptomeninges, thrombosis of the superior longitudinal sinus (no sinus puncture had been done) ulcerocaseous nodular tuberculosis of the lungs, nodular tuberculosis of the liver, kidneys and spleen, tuberculous ulceration of the cecum, and the mesenteric lymph glands, dilatation of the lateral ventricles of the brain, and chronic left otitis media

EARLY INTERMITTENT UNILATERAL MANIFESTATIONS

The following two cases illustrate the presence of early intermittent unilateral manifestations of meningitis Case 2 is one of tuberculous meningitis, case 3, one of meningococcic meningitis Because of the unilateral manifestations, the first case was diagnosed as an upper respiratory infection on admission and the second case was diagnosed as an acute anterior poliomyelitis The second case also illustrates the importance of early spinal puncture

Case 2—R C, a white boy, aged 3 years, was admitted to the Cook County Hospital with a history of sore throat, anorexia, headache, convulsions and malaise of four days' duration The patient s mother had died of tuberculosis There was impaired resonance of the right side of the chest with a few crackling rales scattered over the chest There was no *tubular breathing The neck was slightly rigid and the* Brudzinski sign was suggestive The Kernig sign was positive on the right side and negative on the left The Oppenheim sign was also positive on the right and negative on the left Three days after admission there were definite signs of meningitis The patient had convulsions, which started in the right arm, involved the left leg and then became generalized. There were at this time bilateral Kernig, positive Brudzinski and positive bilateral Oppenheim signs The cerebrospinal fluid was clear and under increased pressure. The Pandy test was positive, and there were 152 cells per cubic millimeter, mostly lymphocytes The Wassermann reaction was negative, and no organisms were obtained on direct smear or culture A diagnosis of tuberculous meningitis was made The patient died two days later

The necropsy revealed miliary tuberculosis in the lungs, liver, kidneys and spleen, left diaphragmatic pleurisy (tuberculous), miliary tuberculosis of the brain and leptomeninges, exudative tuberculous leptomeningitis, *caseous tracheobronchial* glands with rupture into the right main bronchus, caseous tuberculosis of the right lower lobe, dilatation of the ventricles of the brain

Case 3—J B, aged 2½ years, seen in consultation, had had rigidity of the neck and a left-sided Kernig and neck Brudzinski sign for three days The unilateral manifestations suggested acute anterior poliomyelitis, and the physician had deemed it unnecessary to do a spinal puncture On the third day, however, when the meningeal symptoms became bilateral, a spinal puncture was done The cerebrospinal fluid was turbid and contained several thousand cells and many meningococci The case terminated fatally Necropsy was not performed

LATE CONSTANT UNILATERAL MANIFESTATIONS

The following case illustrates the occurrence of constant unilateral manifestations in a patient who had had a mastoiditis, the meningeal symptoms appearing late in the course of the disease

Case 4—L W, a boy, aged 2 years, entered the Sarah Morris Hospital for Children, April 30, 1927, in the service of Dr Ira Frank, with a history of fever of eight weeks' duration and slight swelling behind the right ear of one week's duration The right ear drum had been punctured eight weeks before admission A mastoidectomy was performed on the day of admission to the hospital May 6, six days after the operation, the child became drowsy and vomited Physical examination, however, was negative May 7, the child was drowsy Ankle clonus was present on both sides, especially on the right The pulse was slow and irregular The mastoid wound was reopened because of the possibility of a thrombosis of the lateral sinus A spinal puncture was done, May 7 8 cc. of fluid was removed under increased pressure (28 mm of mercury), the cell count was 107, and there was a trace of globulin The Wassermann and Lange tests were negative

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* From the Sarah Morris Hospital for Children of the Michael Reese Hospital and from the Department of Pediatrics of the Cook County Hospital

The next day the child remained drowsy and listless and had an ankle clonus on the right side There was a papilledema of both optic disks The temperature was 103 the pulse, 108, the respiration, 44 May 10 another spinal puncture was done, which yielded 20 cc of slightly cloudy fluid under increased pressure (28 mm of mercury) The cell count was 1,300 with 80 per cent lymphocytes On direct smear, gram-positive diplococci were found with occasional short chain arrangements, which proved on twenty-four hour culture to be hemolytic streptococci

A right-sided decompression operation was done the same day A tense, bulging dura was found No ventricular fluid was obtained on needling The next morning the child had convulsions involving both legs and the left arm The pulse became gradually weaker, and death occurred the same day

Necropsy, performed by Dr Benson Bloom, revealed a fibrinopurulent exudate of the leptomeninges over the left convex surface of the brain, around the parietal and temporal region (fig 1 *A*) No exudate was seen on the right convex surface of the brain The subarachnoid fluid of the base of the brain was cloudy and pale gray, and over the inferior surface of the brain in the region of the base there was a diffuse thickening of the pia arachnoid but no green fibrinopurulent exudate like that seen on the outer surface of the left cerebral hemisphere In the lateral portion of the right temporal lobe there was a large area of irregular softening of the brain substance due to the decompression operation (fig 1 *B*) In the outer portion of the right cerebellum was another area of softening with abscess formation which probably communicated with the mastoidectomy wound on the right side The right middle ear was filled with thick, greenish, purulent material The left middle ear was normal Sinus thrombosis was not found

EARLY CONSTANT UNILATERAL MANIFESTATIONS

The following three cases are quoted here to illustrate the occurrence of early constant unilateral symptoms One case proved to be tuberculous meningitis, one was most likely a streptococcus and the other a meningococcus meningitis

Case 5—J A, a colored boy, aged 1 year, was admitted to the Cook County Hospital, Jan 15, 1927, with a history of inability to walk, fever, anorexia for seven days, diarrhea for three months, and loss of the use of the left side of the body for three days The developmental history was normal the first tooth having erupted at 5 months and the child having sat up at 6 months of age There was no history of any previous illness The patient's mother had had three miscarriages When the child was examined on admission, the lungs were normal but the left arm and leg appeared weak and useless with a suggestion of spasticity The cerebrospinal fluid obtained by spinal puncture was colorless and under increased pressure There were 600 cells

Three days later the patient had a left-sided facial palsy There was moderate rigidity of the neck Kernig's sign was negative The cerebrospinal fluid on this day contained 300 cells, and a pellicle formed on standing The following day the Babinski sign was positive on the left side the reflexes were greatly exaggerated, and there was a paralysis of the left arm and a paresis of the left leg There also was a head drop and the eyes were turned to the right A cistern puncture was done the following day and fluid was obtained under increased pressure It contained 300 cells per cubic millimeter, the Pandy and Ross-Jones reactions being negative Roentgenologic examination showed a density radiating outward from the right hilum and suggestive foci of pneumonia A diagnosis of encephalitis or meningitis was considered The patient died one week after admission

The conditions found at necropsy were diffuse basilar tuberculous leptomeningitis hyperemia and edema of the brain and leptomeninges marked dilatation of the lateral ventricles diffuse nodular caseous tuberculosis of the lungs miliary tuberculosis of the liver spleen and tracheobronchial glands, and bilateral otitis media

Case 6—R K a boy, aged 1 year, admitted to the Sarah Morris Hospital for Children, May 15 1927, had convulsions twelve hours previous to admission The patient had been at the hospital six months previously for a partial intestinal obstruction, possibly an intussusception which reduced spontaneously

The present illness began the day following a party given in honor of the child's first birthday The father stated that at the onset of the illness the child was in a peculiar position described as approaching the knee-chest position. Later, respirations became rapid and lateral nystagmus and generalized convulsions occurred The convulsions were repeated immediately preceding admission to the hospital Development and feeding had been normal

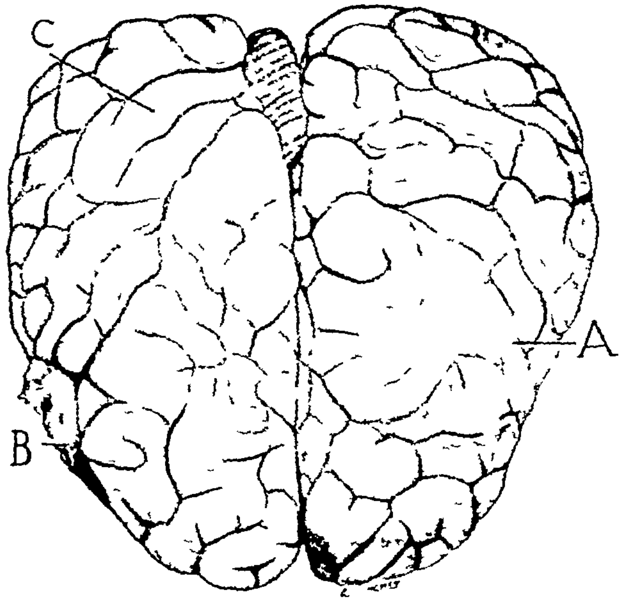

Fig 1—Anterior superior view of the brain showing unilateral meningitis affecting the left parietal and temporal region *A* meningitic exudate *B* focal necrosis following decompression operation, *C* normal meninges.

On admission, the child was having convulsions He also had internal strabismus of the right eye. The pupil reacted normally There was no rigidity of the neck, and the reflexes were all normal The tonsils were hypertrophied The temperature was 102 and rose in a few hours to 104 A spinal puncture was done on the day of admission The fluid was clear and under increased pressure the cell count was 10, and the globulin test was negative. The Wassermann and Lange tests were also negative The sugar content was 51 mg per hundred cubic centimeters of fluid The culture of the fluid was contaminated The white blood count was 45 000 with 93 per cent polymorphonuclears The urine contained acetone and reduced Haines solution The reduction test however, was negative on subsequent examinations

Because of the negative reactions of the cerebrospinal fluid, the condition was thought possibly to be due to the onset of an acute infectious disease with secondary acidosis although tuberculous meningitis and acute encephalitis were also considered

The day after admission, the child s temperature rose to 105, and a number of crepitant rales were present over the left base The urine did not contain acetone or sugar, and the white cell count dropped to 18,000 with 84 per cent polymorphonuclears The Pirquet test was negative Pneumonia with secondary acidosis was considered

On the reappearance of convulsions, a cistern puncture was done Clear fluid was obtained under increased pressure There were 81 cells per cubic millimeter, of which 50 per cent were polymorphonuclears The globulin test was positive No organisms were found on direct smear or culture

A neurologic examination revealed some opisthotonos There was left hemiplegia with continuous clonic movements of the left lower extremity, outward rotation of the eyeballs, nystagmoid movements to the left, and haziness of the temporal side of the left optic disk A ventricular puncture was attempted but no fluid was obtained

The next day the patient was in deep coma and had spasticity of the left lower extremity The heart and lungs were normal A spinal puncture was done but the fluid was bloody, a cistern puncture was therefore done Fifteen cubic centimeters of cloudy fluid was obtained under increased pressure The fluid contained 1,200 cells, mostly polymorphonuclears and some large endothelial cells No organisms were found Because of these conditions, 20 cc of meningococcic serum was introduced into the cistern The diagnosis of localized meningitis, with possibly a streptococcus infection spreading to the rest of the meninges, was considered. Acute encephalitis was also considered Following the cistern puncture the child had a left-sided convulsion and frothing at the mouth Death occurred the same day

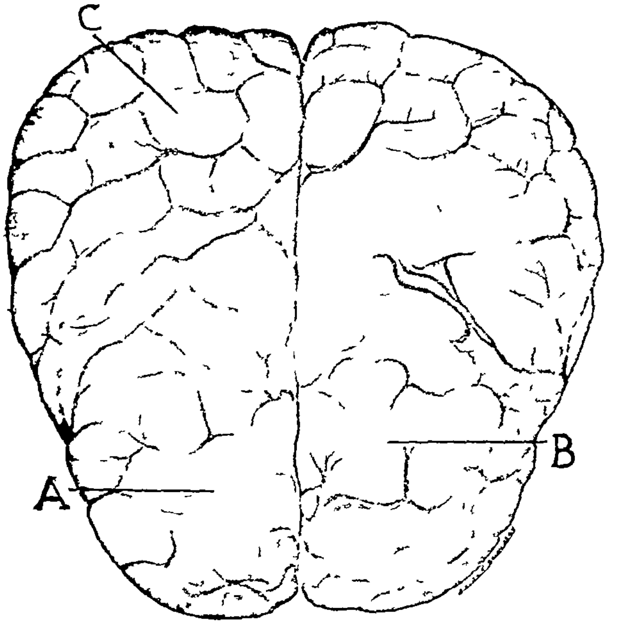

Fig 2—Anterior superior view of the brain showing localized meningitis *A* meningitic exudate over right frontal region *B* meningitic exudate over left frontal and parietal region *C* normal meninges

The necropsy performed by Dr *Benson Bloom*, revealed a small area of traumatic subdural hemorrhage consisting of a loose blood clot about 4 cm in diameter seen beneath the anterior fontanel Diffuse subarachnoid hemorrhage was present all over the right convex surface of the brain The hemorrhage most likely was due to trauma inflicted during the attempt to do a ventricular puncture There was a purulent subarachnoid exudate involving the frontal and parietal surfaces of the brain The exudate appeared more extensive on the left side than on the right, especially over the parietal region (fig 2) The meninges at the base of the brain were unaffected The ventricles were not dilated and did not contain exudate There was a slight foramen magnum pressure-groove at the base of the cerebellum There was a hyperplasia of the mesenteric and intestinal lymphoid tissue and some atelectasis of the upper lobe of the right lung

Case 7—L G,[1] a girl, aged 10 years, entered the Sarah Morris Hospital with a history of a cold four weeks before admission, which was followed by moderate enlargement of the cervical glands Two weeks previous to admission the patient came home from school complaining of headache Since that time she had had an intermittent elevation of temperature, at times as high as 104 The headache disappeared and then reappeared a few days later On the day before admission, she had a convulsion which lasted fifteen minutes and was limited to the left side of the body Following the convulsion, the patient was unable to move the left arm or leg

There was paralysis of the left arm with loss of the deep reflexes The left side of the face was weak, and the tongue deviated to the left Both legs could be moved, but the left appeared weaker than the right The contralateral Brudzinski sign was positive on the right side but not on the left The left achilles jerk was increased, the right achilles jerk was normal There was a beginning ankle clonus The left wrist jerk was absent the right was diminished The abdominal reflexes were fairly brisk on the right side and absent on the left side The ophthalmoscopic examination showed the disks to be small, slightly oval and sharply circumscribed The retinas were slightly hyperemic The arteries were normal All the veins were somewhat congested and dilated No pathologic regions were visible

A spinal puncture done on the day of admission yielded slightly turbid cerebrospinal fluid under increased pressure with 567 cells, of which 55 per cent were neutrophils, 40 per cent small mononuclear, and 5 per cent large mononuclear Direct smear was negative Globulin was increased and the Wassermann reaction was negative The Lange test showed 0000004400 A second specimen of spinal fluid obtained the next day was turbid, under increased pressure and contained 650 cells, 64 per cent lymphocytes and 26 per cent neutrophils Direct smears showed an occasional gram-negative extracellular diplococcus

The diagnosis lay between cerebral abscess and meningitis The localized symptoms pointed toward a cerebral abscess over the right temporal region The cerebrospinal fluid, however, pointed to meningitis The diagnosis was decided on in favor of a brain abscess, and a decompression was performed in the temporal region Needling of the brain, however, did not reveal any pus The meninges in the prerolandic area were gray and glistening and did not show exudate The postrolandic area as far as could be seen, showed a hyperemia with a little fibrinous exudate

The next day the patient received 30 cc of antimeningococcus serum intraspinally, and a general improvement in her condition was noticed The spinal fluid removed that day was cloudy, with a cell count of 2,300 and 72 per cent polymorphonuclears No organisms were seen and no growth was obtained on culture medium The same day examination showed that the patient was able to raise the left arm but unable to replace it The right side was normal The following four days she seemed to be improving and the paralysis seemed to clear up, although she complained of headache A week after the operation, the patient developed a marked edema of the neck and the glands were incised and drained The patient, however, became gradually worse and died ten days after admission

The necropsy was performed by Dr O T Schultz two hours after death A thick yellow exudate was found beneath the pia of the convex surface of the right temporal and parietal lobes A small amount of similar exudate was present over the convex surface of the left hemisphere, and on the lower surface of the brain on the left side. There was no exudate about the base of the brain or the cervical cord On section, the right lateral ventricle contained a slightly increased amount of cloudy fluid the left ventricle was normal Except as stated, there were no other gross changes in the brain On microscopic examination the pia was found to be infiltrated by leukocytes, and fibrin was present in slight amount In some of the larger arteries in the infiltrated pia, the endothelium was separated from the rest of the wall by a narrow, dense zone of leukocytes The brain tissue at the site of the operation was more cellular than the rest of the tissue, owing to the diffuse proliferation of glia cells

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[1] This case was reported previously (Arch Pediat 40 164 [March] 1923 but because of its importance a summary is given here

The lungs were moderately congested posteriorly, and the spleen was enlarged to two and one half times its normal size The liver was moderately enlarged, as were also the kidneys From the meninges, a culture of meningococcus agglutinated by stock meningococcic serum was obtained, and from the fluid of the right ventricle a culture of *Streptococcus hemolyticus* was developed

In the following case of tuberculous meningitis, I believe that the unilateral symptoms of meningeal irritation and the blindness of one eye may be explained on the basis of a tuberculoma at the base of the brain

Case 8 —C D, a colored girl, aged 12 years, was admitted to the Cook County Hospital, Oct 22, 1927, with a history of vomiting, constipation of two weeks' duration, and stupor with a duration of two days There was also a history of headache of seven months' standing, and blindness of the left eye The headache was mainly localized over the left supra-orbital region, and was worse at night The patient had whooping cough ten years ago, mumps seven years ago, and measles two years ago There was no history of tuberculosis in the family

At the time of admission the patient was stuporous, and the temperature was 101 2, the left pupil was smaller than the right, the right fundus was normal, and the left showed optic atrophy There were decreased resonance and diminished breath sounds over the right upper lobe anteriorly The neck was rigid, and the Kernig and Babinski signs were positive on the right side and negative on the left side The knee jerks were present on the right side and absent on the left The achilles reflex was present on both sides The white blood count was 21,000, with 80 per cent lymphocytes The cerebrospinal fluid obtained by lumbar puncture one day after admission was clear, under increased pressure, and contained 50 lymphocytes per cubic millimeter The Pandy test was strongly positive The sulphosalicylic-mercuric chloride ratio was 1 to 2 Sugar was 10 mg per hundred cubic centimeters of fluid, and the Wassermann reaction was negative A second spinal puncture, done four days later, yielded about the same results as the first except that there were 490 lymphocytes per cubic millimeter

The Pirquet and Mantoux tests were negative The blood Wassermann reaction also was negative The roentgenologic examination showed increased density in the right upper lobe The skull plate was negative for tumor of the sella turcica

The patient regained consciousness at times, but was stuporous most of the time She became progressively worse and died seven days after admission to the hospital

A necropsy performed by Dr Paul Schmidt revealed a tuberculoma at the base of the brain (fig 3) with pressure atrophy of the optic chiasma, tuberculous osteitis of the sella turcica and surrounding bone, miliary leptomeningitis, caseous tuberculosis of the tracheobronchial glands, purulent tracheobronchitis, right obliterative pleuritis, and subacute fibrinous peritonitis

PATHOGENESIS

The mechanism responsible for the production of unilateral symptoms in meningitis does not seem to be the same in all cases In some cases the necropsy may show a unilateral or localized exudate, which may explain the unilateral symptoms In other cases, no anatomic changes are found I believe that the phenomenon may be explained on the basis of three possibilities (1) localized meningitis, either acute or chronic, (2) generalized meningitis with a heavier exudate on one side of the brain than on the other (3) a localized permanent irritation of the brain, such as occurs in brain abscess or tumor, producing a so-called sterile meningitis Finally, there is a possibility that a temporary accumulation of cerebrospinal fluid over one portion of the brain may temporarily produce unilateral symptoms

According to this conception, unilateral manifestations of meningitis may be classified as primary, such as occur in the meningococcus or the tuberculous types, and as secondary, such as occur in connection with a brain abscess, brain tumor or mastoiditis Localized meningitis is not as rare as one would suppose it to be, as is proved by some of the cases reported here that came to necropsy I have also encountered a case of fibrinous exudate at the base of the brain in a baby several weeks old most likely having followed cerebral hemorrhage which occurred either at or before birth

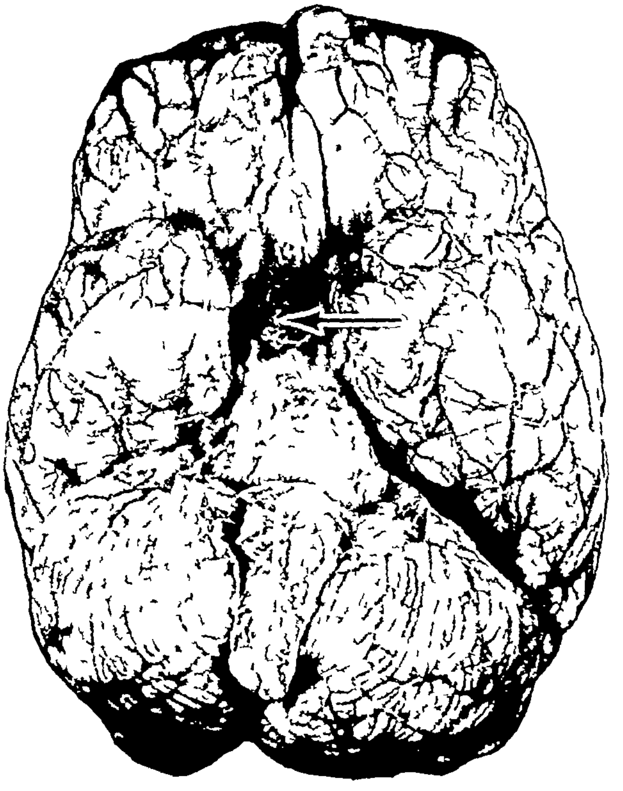

Fig 3 —Tuberculoma at base of brain

In an attempt to produce experimental meningitis in rabbits by the injection of staphylococci and streptococci into the cisterna magna, Dr A M Serby and I found that in most cases an exudate developed only at the base of the brain, or over one hemisphere of the brain

DIFFERENTIAL DIAGNOSIS

The fact that meningitis may be accompanied at one time or another by unilateral manifestations adds to the difficulty in the differential diagnosis between meningitis, brain abscess and acute anterior poliomyelitis The history of sudden onset may help in differentiating meningitis with unilateral manifestations from brain abscess, as may also the temperature, which is much higher in meningitis than in brain abscess Absence of paralysis may help rule out poliomyelitis, although paresis and paralysis may manifest themselves in meningitis also The final diagnosis must be made by the cerebrospinal fluid, according to its color, increased protein content, increased cell count, pellicle, reduction in sugar and chloride content, and above all, the organisms present It is therefore important to examine the cerebrospinal fluid in every case presenting unilateral symptoms

TREATMENT

Before treatment is instituted in a case manifesting unilateral symptoms of meningitis the cerebrospinal fluid should be obtained and studied for the cell count and an increase in protein, and a search should be made for the organism If the fluid has cellular and chemical changes characteristic of meningitis but no organisms are found, an attempt should be made to decide whether the meningitis or meningeal symptoms are primary or are secondary to some other infection in the vicinity of the meninges, such as otitis media, brain abscess or brain hemorrhage If the fluid is turbid, antimeningococcic serum should be administered If the meningitis is secondary, the primary cause should be removed whenever possible For instance, in the case of otitis media, the mastoid should be opened and free drainage permitted The same is true of brain abscess If no cause is found, repeated spinal, ventricular or cistern drainage should be carried out Case 9 illustrates the importance of surgical treatment in meningitis with unilateral manifestations due to brain abscess

Case 9 —H C, a boy, aged 5½ years, was admitted to the Sarah Morris Hospital for Children, March 28, 1924, with the diagnosis of an acute bilateral otitis media and grip March 17, a left mastoid operation was performed and pus obtained One week later, the patient had several convulsions, mostly left-sided The physical examination at this time was negative and the evegrounds were normal The patient was discharged, May 21 1924, with the mastoid wound granulating but not draining

June 7, 1924, the patient was readmitted, complaining of vomiting after meals fainting spells and dizziness during the night, with persistent frontal headaches, especially in the morning The child did not appear acutely ill and the temperature was normal

The mastoid wound was draining thick pus, but there was no drainage from the ears The pupils were dilated and reacted sluggishly Ophthalmoscopic examination showed bilateral choked disks There was no neck rigidity, but neck movements caused pain There was a Babinski reflex present on the left side The white blood count was 9,300 with 47 per cent polymorphonuclear leukocytes and 44 per cent lymphocytes Cerebrospinal fluid obtained by spinal puncture was under increased pressure, and the cell count was 20, all lymphocytes The globulin test was negative, as was also the Wassermann reaction The Lange test gave a tuberculous meningitis curve Three days later a bilateral internal strabismus was noted, and the Brudzinski and Kernig signs were positive on the left side The roentgen-ray examination did not reveal a brain tumor or abscess June 16, the neck was rigid, and there was a positive Brudzinski and Babinski sign on the left side The Kernig sign was present, especially on the left and there was weakness of the right external rectus muscle The left knee jerk was absent, and the deep reflexes of both upper extremities were also absent The previous day, the white cell count was 30 000 and the temperature was 103 F The cerebrospinal fluid was turbid and under increased pressure The cell count was 3,600, of which there were 58 per cent polymorphonuclear leukocytes and 40 per cent lymphocytes There was 73 mg of sugar per hundred cubic centimeters of fluid and direct smear was suggestive of gram negative intracellular diplococci and also lancet-shaped gram-positive organisms A diagnosis of brain abscess which had ruptured or a localized meningitis was considered Thirty cubic centimeters of antimeningococcus serum was given intravenously The following day the fluid was less turbid, the cell count was 1 420 and the globulin was increased Thirty cubic centimeters of serum was again given June 17, 1924, the left mastoid wound was reopened, and the dura exposed and incised over the temporal region. About 10 cc of a thick pus was evacuated Two days after the operation, the child was greatly improved, and the temperature dropped to 99 The neck, however, was rigid and the choked disks were more pronounced There were very few minute hemorrhages at the summit of both disks The pus obtained by operation showed *Streptococcus hemolyticus* on culture Eleven days after operation there was very little discharge from the wound, which was healing, and there were no neurologic symptoms The spinal fluid contained twenty-two cells, all lymphocytes, and 50 mg of sugar The globulin, smear and culture were all negative June 29, the child was happy, and only slight bilateral choked disks were present

July 9, one month after the readmission, the child was stuporous, the pupils were dilated and there was an internal strabismus with marked choked disks The Brudzinski sign was positive and spinal fluid sugar was 74 mg per hundred cubic centimeters The temperature was normal at this time The same left mastoid wound was reopened and pus evacuated Drainage of the wound continued, but there were no abnormal conditions and the child was discharged, October 22

Five days later, the child was readmitted because of a profuse discharge The child was discharged, Jan 7, 1925, with a normal temperature and no discharge from the wound

Feb 7, 1926, the child was readmitted because of profuse drainage from the right ear and pain in the right ear for one week prior to the onset of the discharge The following day pus was obtained from an incision into a left subperiosteal abscess The child was discharged in good condition, February 19, with a small amount of pus draining from both ears

CONCLUSIONS

1 Unilateral manifestations may occur in meningitis

2 The unilateral symptoms may be intermittent or constant, and may occur early or late in the course of the disease

3 Unilateral symptoms may occur in meningitis caused by any bacteria

4 The necropsy in meningitis with unilateral symptoms may or may not show unilateral or localized pathologic changes

5 Meningitis with unilateral symptoms may be primary or secondary

6 Brain abscess, brain tumor, encephalitis and acute anterior poliomyelitis are the conditions most frequently confused with meningitis of the unilateral type

7 The examination of the cerebrospinal fluid is the best means of differentiating meningitis with unilateral symptoms from other conditions

8 The treatment of a patient with unilateral meningeal manifestations depends on whether the meningeal condition is primary or secondary In the secondary form, an attempt should be made to remove the original cause In the primary form, an attempt should be made to find the causative organism in the cerebrospinal fluid, with treatment by serum in meningococcic meningitis, or by palliative means if other organisms are found

30 North Michigan Avenue

The Liver Aids the Muscles in Storing Glycogen—But there is another organ of the body which acts further as a storehouse for glycogen This is the liver, whose cells are so constructed that they too convert the dextrose or sugar in the blood into glycogen and retain it, until the store in the muscles is so far depleted that it must be replenished If it were not for the stored glycogen of the liver which is supplied to the muscles at their need starvation would more quickly end in death—Goldmark Fatigue and Efficiency, p 22

THROMBOSIS OF THE DEEP VEINS OF THE LOWER EXTREMITY

REPORT OF CASE *

ROBERT F. BARBER, M.D.
AND
F. I. SHATARA, M.D.
BROOKLYN

While thrombosis of the deep veins—venae comites—of the lower extremity is often mentioned in the literature, its occurrence is so rare as to warrant a brief presentation of the subject, and the report of a case. In a careful study of more than 2,000 cases of varicose veins and their complications during the last ten years, the case here presented is the only one observed of true thrombosis of the deep veins of the lower extremity. It is the only case in which the venous current is completely diverted into the superficial saphenous system resulting in varicosities, but contraindicating operation for ligation or excision of the superficial veins.

It is commonly taught that the guide to the operability or inoperability of a given case of varicose veins of the lower extremity is the filling time test, that when the filling time is thirty seconds or less, this finding is an indication of involvement of the deep veins and the incompetence of the valves in the perforating veins, permitting regurgitation from the deep into the superficial system, rendering the case inoperable. If, on the other hand, the filling time is more than thirty seconds, it is alleged that the deep and perforating veins are normal and the case is operable. Extensive clinical observation, checked up by operation, studies of venous pressure by direct puncture and connection to a manometer—a method introduced by us—and dissection on cadavers have convinced us that the filling time test is of little value, that the actual time taken to fill the saphenous vein after it is emptied depends on the caliber of the vein, the number of its tributaries, and the vis a tergo, that the deep veins, owing to the strong fascial support which they enjoy, are seldom varicosed, except when they are the site of infectious thrombosis, as in the case here reported, that the valves in the perforating veins are often missing, and have been found to open both ways, and that they play a very small role in determining the direction of the stream between the superficial and the deep systems. Kampmeier,[1] in an exhaustive study of the origin of the venous valves, says:

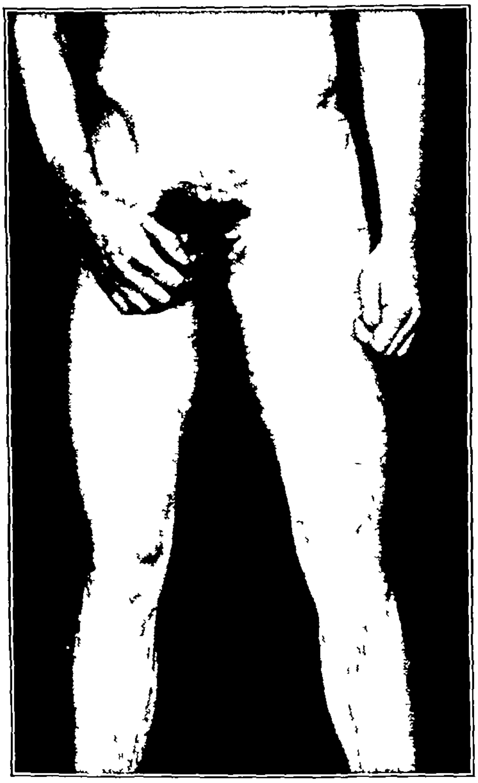
Fig. 1.—Anterior view of patient.

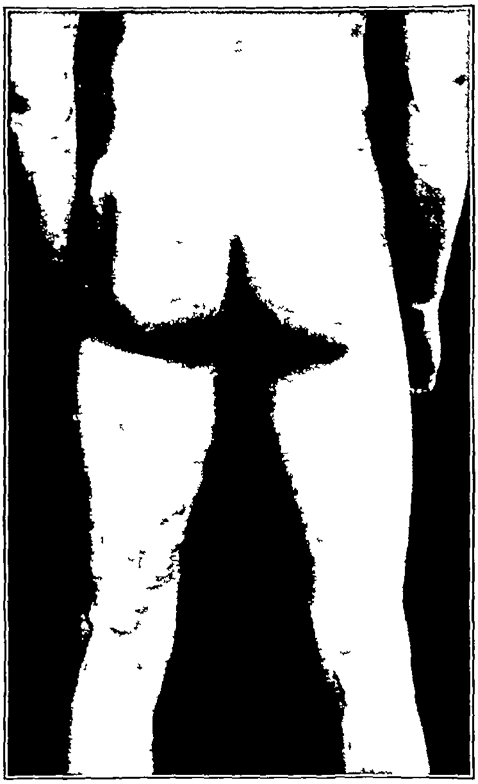
Fig. 2.—Posterior view of patient.

> The explanations usually presented respecting the utility of the venous valves demand a reconsideration. The writer believes that the factors underlying their function must be sought not in the circulation itself, but extrinsically, that is, in the effects of external compression of the peripheral venous plexus. It is significant, though it may be only a coincidence, that the valves are laid down primarily in areas of muscular activity and at a time when the fetus commences to execute skeletal movements, while the intrinsic gateways of the propulsive mechanism, the heart, are established much earlier.
>
> The reader need hardly be reminded that animals whose bodies and appendages are generally in a horizontal posture, such as amphibians, reptiles, etc., are well provided with venous valves. Moreover, during the second half of pregnancy—during the period when the venous valves are being formed and completed—the human fetus is prevalently carried with the lower extremities uppermost, thus in a position which is farthest removed from the possible influence of gravity in the development of the valves.

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* From the Surgical Department, Long Island College Hospital.

[1] Kampmeier: Am. J. Anat., Jan. 15, 1927.

We have operated on patients with a filling time of less than thirty seconds, with no ill after-effects The operation performed, a ligation and excision of the saphenous vein and its tributaries is safe, gives excellent results, and is applicable to all cases of varicosities of the saphenous system, irrespective of the filling time, except where there is a definite contraindication, as in the case here reported

REPORT OF CASE

T S, a white youth, aged 19 years, single, a plumber's helper, born in England, reported to the Polhemus Clinic in March, 1925, for examination of varicose veins of the lower left extremity

His present illness followed an attack of typhoid in 1919 for which he was treated at the Long Island College Hospital Before leaving the hospital in October, 1919, he noticed that his left leg was swollen He was told that he had a "milk leg," and his leg was strapped Ever since that time the veins of his lower left extremity have been markedly enlarged but he has not complained of the symptoms often associated with varicose veins, such as pain, numbness, tingling or fatigue There have been no trophic changes in the soft tissues, and no ulceration

As a child he had measles and diphtheria He had influenza at the age of 11 and typhoid at 13 He has been fourteen years in the United States He has been working since the age of 13 as a plumber s helper, and is on his feet a great deal His habits are regular, and there is no history of constipation or any other intra-abdominal obstruction to the venous current He wears garters His mother suffered from varicose veins and was operated on by Dr Barber

The Wassermann reaction is negative The urine is normal The systolic blood pressure is 125, diastolic, 80 The general physical examination is negative Associated varicosities consist of a left varicocele, there are no hemorrhoids

The left internal saphenous vein is markedly varicosed throughout its entire extent, but this varicosity differs from the usual varicosities of this vein in the following respects Over the fossa ovalis, where the internal saphenous vein dips to join the femoral vein, there is a markedly varicosed and tortuous mass of veins, consisting of a wormlike collection of veins irregularly clumped together, and resembling somewhat the caput medusae in an advanced case of portal obstruction The mass measures about 2 inches (5 cm) in diameter and it is difficult to locate the main stem of the vein All the tributaries that drain into the internal saphenous vein at this point are markedly varicosed, the superficial external pudic, the superficial external and internal circumflex, and the superficial epigastric veins stand out prominently In these tributaries the venous current is diverted from its usual course Thus in the superficial external circumflex the venous current runs upward instead of downward and ultimately enters a vein in the axillary region with which the circumflex establishes an anastomosis

The superficial internal circumflex vein on the left side runs upward toward the umbilicus, where it becomes continuous with the analogous vein on the right side The latter vein runs downward to drain into the right saphenous vein The two internal circumflex veins are markedly enlarged, measuring about 1 cm in diameter, tortuous, and look like an inverted V with the apex at the umbilicus In this manner a great deal of the blood from the left internal saphenous vein finds its way into the right internal saphenous vein It is possible that an anastomosis exists with the para-umbilical vein The direction of the current is upward in the left and downward in the right superficial internal circumflex veins

When the patient is up on his feet, these veins stand out prominently, when in the horizontal position, the veins become less prominent, and when placed in the Trendelenburg position, the veins collapse

A manometer reading was taken, the needle being introduced into the left superficial internal circumflex vein The blood in the manometer tube rose to the heart level, a distance of 14 inches This finding illustrates the fact that, even with such handicaps obstructing the venous current in its way toward the right auricle, the vis a tergo rises to a point sufficient to propel the blood onward toward the heart The old teaching, therefore, that in varicose veins there is a reversed circulation, with the blood flowing away from the heart is erroneous As long as cardiac compensation is maintained, no such reversal of current occurs

The Trendelenburg test was positive, and the filling time was thirty seconds

COMMENT

From these observations we are led to believe that a partial or complete thrombosis, of an infectious origin, exists in the deep veins of the left lower extremity, extending upward to a point proximal to the point at which the saphenous joins the femoral vein How far up the femoral or iliac the thrombosis extends, it cannot be positively stated, for while the patient has an associated left varicocele he has no hemorrhoids, which would have existed had the iliac been thrombosed up to a point proximal to that at which the middle hemorrhoidal vein drains into it

Operation in this case is absolutely contraindicated The patient has been under observation for more than two years and a half, and it will be interesting to learn what the final outcome will be

The accompanying illustrations give an idea of the appearance of the superficial veins in the left lower extremity

153 Clinton Street

VAS LIGATION FOR THE PREVENTION OF PREOPERATIVE AND POSTOPERATIVE EPIDIDYMITIS *

J A C COLSTON, MD
BALTIMORE

In all operative procedures on the bladder or prostate gland, epididymitis is a frequent and often a troublesome complication Particularly is this the case in dealing with patients suffering from prostatic obstruction, either of the benign or of the malignant type It is, of course, a well known clinical fact that epididymitis may arise at any time throughout the course of prostatic obstruction, and, while it is rarely a dangerous complication, it plays an important part in increasing the length of hospitalization of the patient and usually has a markedly depressing effect on the morale In some extremely sick patients with lowered resistance, the added effect of this infection may prove to be too much for the individual to withstand, and in such cases, fortunately rare, the fatal outcome may be directly attributed to the added burden of the epididymitis Then, too, in the very rare case in which a blood stream infection develops, either during the preparatory treatment or postoperative course, the septicemia often appears directly after the epididymitis, so that in some of these cases, at least, the epididymis may be considered as the portal of entry of the infection into the circulation

In recent years many urologists have recognized the importance of the prevention of epididymitis, and for this purpose a growing number have advocated vas resection or vas ligation

The recent literature of the subject has been presented by Goldstein,[1] who operated on a series of fifty

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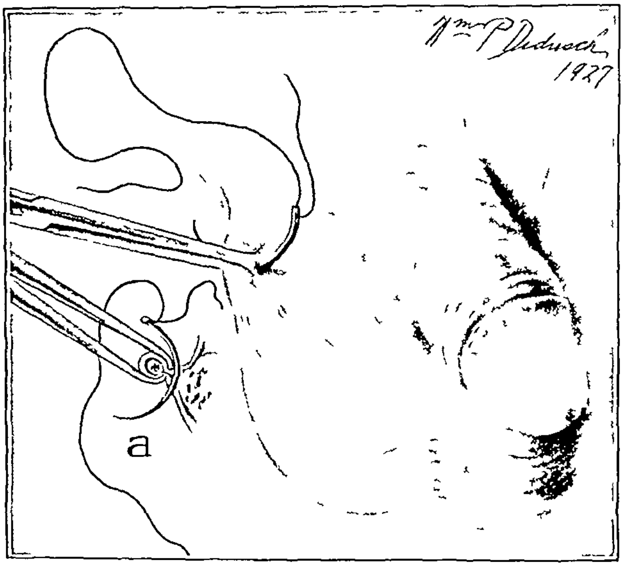
* From the James Buchanan Brady Urological Institute Johns Hopkins Hospital

[1] Goldstein A E Bilateral Ligation of the Vas Deferens in Prostatectomy J Urol **17** 25 1927

unselected patients, twenty-five with preliminary ligation, and twenty-five without Of the twenty-five unligated, 20 per cent developed epididymitis, a figure that corresponds accurately with statistics given by other writers on the subject Among the twenty-five ligated, only one (4 per cent) developed a very mild epididymitis, which resulted in no disability This well planned clinical experiment proves without any doubt the efficacy of vas ligation as a preventive of epididymitis following prostatectomy In Goldstein's opinion, the complication is about as frequent following the one-stage suprapubic, the two-stage suprapubic or the perineal technic, and statistics of other observers seem to bear out this impression

As usually practiced, this procedure is carried out just before operation by exposing the cord on each side by a short incision, isolating the vas and either simply ligating it or resecting a small portion Some writers believe that resection offers a surer method of prevention than simple division and ligation and, if the open operation is chosen, this method should probably be carried out, as it adds nothing to the difficulty or time of operation



Vas deferens grasped by Allis clamp and needle passed as closely to vas as possible a cross section view of method

For the purpose of simplifying the procedure and avoiding the open incisions, with the possibility of infection, which is always present in the neighborhood of a suprapubic or perineal wound, the following technic was followed for the first time eighteen months ago, and has been used in a limited series of cases since that time

A small portion of the skin of the scrotum directly over the cord is shaved and painted with Scott's solution[2] or other efficient skin disinfectant The cord is then brought up to the skin and carefully palpated, and the vas isolated from the other structures, which are allowed to slip back The vas is caught by two Allis clamps applied on the skin directly over it in such a way as to fix the vas up against the overlying skin and away from the other structures of the cord It will be found quite possible to do this in practically every case unless scar tissue from a previous operation is present or unless a former inflammatory process makes accurate palpation impossible A sharp needle threaded with silkworm-gut is then passed through the skin of the scrotum between the two clamps, carrying the needle as close to the firmly held vas as possible The ligature is then tightly tied, the ends are cut short and subsequent dressings simply consist in daily application of antiseptic solutions The ligatures are left in place for seven or eight days and then removed

A small amount of reaction develops about the stitch, but in no case in our series has infection developed to such an extent as to require anything else than the simple antiseptic applications mentioned In no case has hematoma or other evidence of injury to the cord developed, and I feel certain that this can always be avoided, provided a small needle is used and that it is passed through the skin as close as possible to the vas

Local anesthesia is only rarely necessary, as the vas can be satisfactorily immobilized with the Allis clamps fixed in the first notch, and the passage of the needle and tying of the ligature can be done so quickly that the patient rarely feels more than the slightest sensation

The procedure was first carried out in the operating room just before prostatectomy was undertaken, but the procedure was so simple that, at the suggestion of Dr E P Alyea of the resident staff of the Brady Urological Institute, it was determined to try it on a limited number of patients entering the hospital for the purpose of undergoing prostatectomy It is, of course, well known that a number of patients develop epididymitis from preliminary instrumentation and especially as a result of the infection that is always present about an indwelling catheter Also it would not seem to be too much to assume that at least some of the infections that develop after operation may not have been caused by operation itself but may have arisen from a seminal vesiculitis or other deepseated infection which had in turn resulted from preoperative instrumentation In any event, it would seem to be logical that the most efficient method for the prevention of both preoperative and postoperative epididymitis would be vas ligation before any urethral instrumentation had been carried out

The simple procedure that has been proposed can be easily carried out in the examining room or at the bedside as soon as the patient is admitted to the hospital The vas is, of course, completely occluded, together with the lymphatics that surround it, and the mild inflammatory reaction that results offers a complete barrier to descending infection over the period of time during which the occurrence of infection is most probable

A series of cases in which preliminary vas ligation has been carried out by the technic described has been analyzed by Dr Alyea, and will be presented later[3]

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[2] Scott's solution consists of mercurochrome 220 soluble 2 Gm water 35 cc alcohol (95 per cent) 55 cc acetone 10 cc

[3] Alyea Edwin J Urol to be published

Habitability of Submarines—It has been found that carbon dioxide can be tolerated in much larger quantities than was previously thought, and that even when 3 per cent is present there may be very little or no indication of its effect on personnel except panting on exertion There is a gradual and insidious absorption, which may not prevent the performance of general duties Nevertheless, it has been found that after several hours of submergence the men become "dopy" and listless characteristics of the effect of carbon dioxide It has been noted that releasing oxygen from the cylinders will "pep up' the crew but there is no neutralization of the increasing carbon dioxide in the blood—Carpenter D N U S Nav M Bull, January, 1928

OPERATION FOR BOW-LEGS, SUBSEQUENT GANGRENE AND AMPUTATION

WILLIAM H VAN DOREN, M D
AND
PAUL B MAGNUSON, M D
CHICAGO

[Note—The following is a statement by Drs William H Van Doren and Paul B Magnuson relative to the case of a girl operated on presumably for the correction of bow-legs by Dr Schireson, concerning whose record an editorial appears in The Journal February 4 page 387 The report was prepared at the request of The Journal—Ed]

Miss S H stated that she consulted Dr Schireson regarding a scar on her left arm which was the result of a burn in childhood, and talked to him at the same time about some bowing that she thought she had in her legs He advised her to have them both taken care of, and to that end sent her to the Osteopathic Hospital, where he operated on her, January 17 She understood that he was to do the operation, no other doctor being mentioned, and paid him $800 in advance for the operations

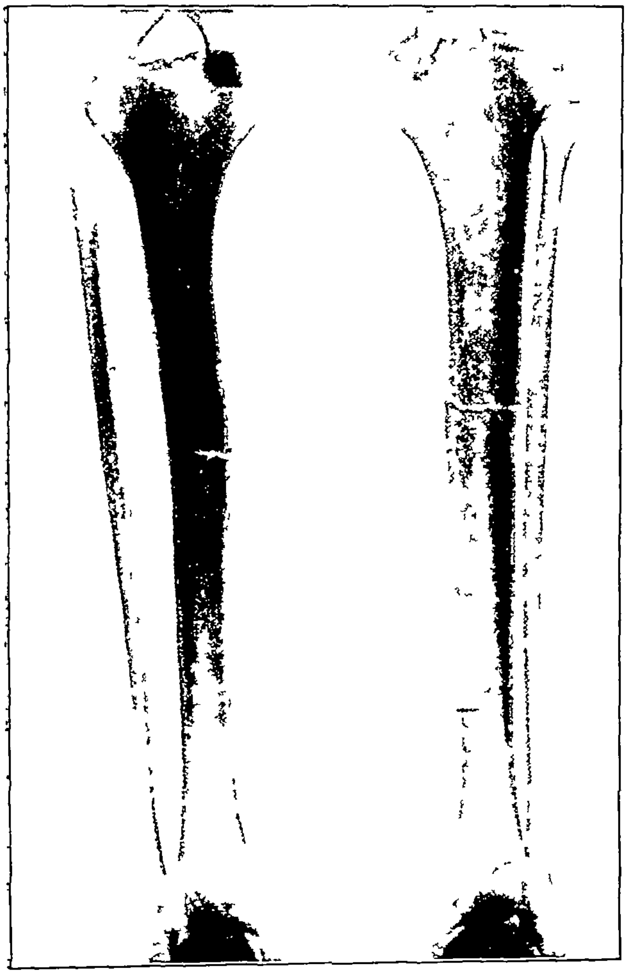

Fig 1—Appearance of limbs previous to amputation

She said that after she had recovered from the anesthesia she was examined by Dr Zaph She asked the nurse who he was and was told that he was the man who helped Dr Schireson do the operation Dr Zaph examined her legs, she said, touching them at various places and asking her if she felt anything She said she could not feel anything in the legs after the operation, at least she was not conscious of his touching the skin on the legs at any point when he asked her

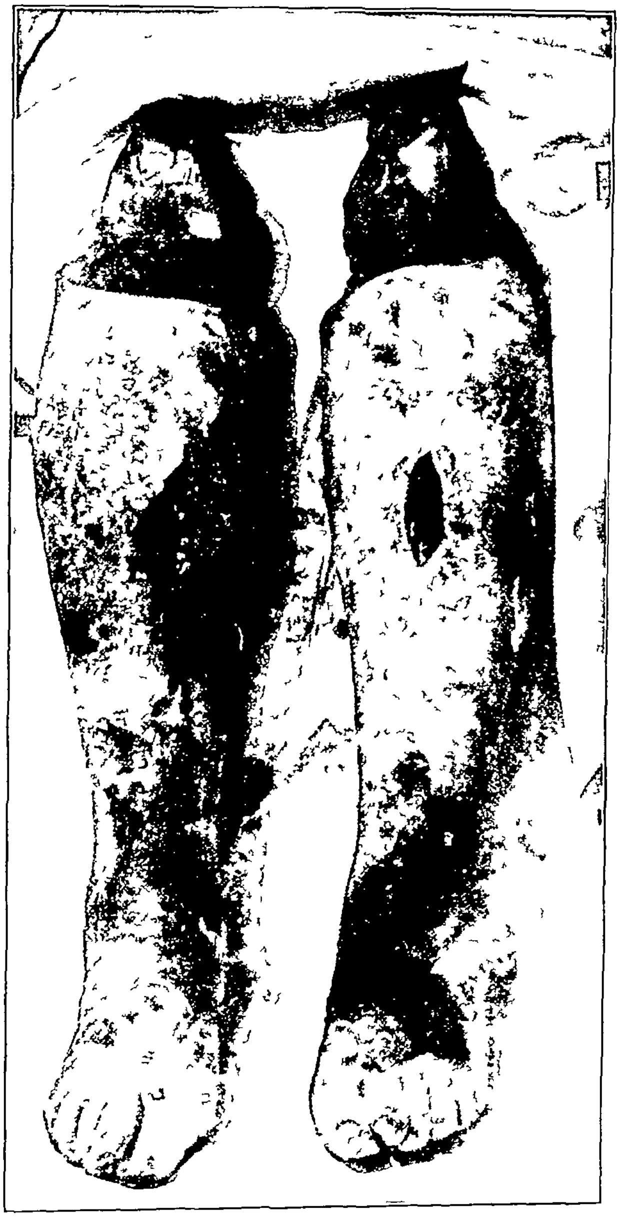

Fig 2—The amputated limbs

The family after a few days looked under the bandages, either with or without permission, and found that her ankles and feet were very much swollen and discolored They became alarmed, but were assured that everything was going all right, that the patient was doing well

January 25, the family called Dr Van Doren and asked him to see the patient This he refused to do unless called by the attending physician The family prevailed on Dr Zaph to call Dr Van Doren, and Dr Van Doren went to the Osteopathic Hospital on that day and found the girl with gangrene of the feet, involving the toes, the balls of the feet and the heels, and an area over the front of each tibia about 5 inches long and from 3½ to 4 inches wide He asked what her blood count was and was informed that none had been made He asked to see the roentgenograms, postoperative roentgenograms were shown to him, in which no changes in the angles of the bones were visible

At the time of the operation there had apparently been a saw cut, supposedly with a circular saw, through about the middle of each tibia, and the sides of these cuts appeared in the roentgenogram to be parallel, and, show that there was no change in the long axis of the bone The fibulas were not cut (fig 1)

Dr Van Doren advised moving the patient, and before the hospital authorities would allow her to be moved she was required to sign a release of the hospital and the doctors involved in the case

She was seen within a few minutes after she was brought to Wesley Hospital—we are told it was not over thirty minutes from the time she left the Osteopathic Hospital until she arrived at Wesley At that time the toes and balls of the feet were gangrenous and the heels were gangrenous, and patches of gangrene were over the front of each tibia, the incisions were open, draining a seropurulent material, there was marked swelling in the legs, which were surrounded about three fourths of their circumference by molded plaster splints which extended from the knee to the bottom of the foot

The patient's temperature on admission was 104, white count, 26,250, hemoglobin, 65 per cent, red cells, 3,120,000 There was a trace of albumin in the urine

The legs were put under an electric drum to supply warmth, the patient was given 25 cc of 1 per cent mercurochrome-220 soluble intravenously, her temperature went to 106 within the next six hours and then dropped for twenty-four hours until it reached 100 In another twenty-four hours—that was Friday, January 27—the temperature again began to rise and the gangrenous area spread upward on the feet and legs, and the patient was told that it would be necessary to do a double amputation in order to save her life After considerable urging by the family and about an hour's delay this was agreed to, and the patient was given spinal anesthesia and both legs were amputated just above the knee She was then given 500 cc of blood from a donor who had already been secured, and was returned to her room with a very moderate amount of shock The temperature ranged downward for five days, when she had a secondary hemorrhage from the stump of the right leg This was stopped by surgical procedure, another transfusion was done, and she has continued to make a steady improvement to this date

The roentgenograms which are submitted herewith show that the long axis of the bone has not been changed by the saw cut, that the tibia is fully splinted and held in position by the fibula, which is attached to it above and below and has not been cut at any point Therefore the angle of the tibia or the fragments of it could not be and are not changed by the saw cuts made at the time of the operation The girl states that she did not have a roentgenogram taken before operation Therefore it must be assumed that the bowing, if any, was largely apparent rather than real being due to the muscles and fatty tissue on the outside of the legs and not to any actual bowing in the bone The operation accomplished nothing except a streptococcic infection

A dissection of the legs has not yet been made and it is impossible to say at this writing whether there was any injury to the blood vessels or nerves at the time of operation

743 Waveland Avenue—181 Lake Shore Drive

BRACHIAL PLEXUS NERVE BLOCK

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Brachial plexus nerve block for operations on the arm is a form of regional anesthesia that has apparently found little favor in this country This fact is somewhat surprising, as the procedure offers quite as striking advantages in its field as does the analogous sacral nerve block so popular in genito-urinary surgery The most recent report, and in fact the only report other than those in specialized textbooks of the clinical application of brachial plexus block is that of Livingston and Wertheim[1] They summarized the results in 1,000 cases reported in foreign journals, and added 105 of their own cases Farr[2] has used the method many times He states that it gives excellent anesthesia, its accomplishment is not difficult, and provided the injection is made slowly and with certain precautions it is comparatively safe The very satisfactory results that I have had with the procedure over a period of three years, and the scarcity of American reports, lead me to report my results in forty-three cases

Result of Operations Under Anesthesia Produced by Brachial Plexus Nerve Block

Number of Cases	Lesion	Result and Comment
1	Palmar abscess	Patient had some pain during multiple incisions and insertions of tubes and drains but did not need any other anesthetic
1	Amputation of thumb	Patient an old man whose subclavian artery arched unusually high paresthesia not obtained on insertion of needle augmented by subcutaneous infiltration round base of thumb
17	Closed reduction fracture of lower end of radius	In all perfect anesthesia was obtained except in one which was the first case attempted this was an impacted Colles fracture in an old woman and was reduced after infiltration round site of fracture
8	Closed reduction fracture of both bones of forearm	All perfect including one in a child aged 8
1	Closed reduction fracture of both bones of forearm (compound gunshot wound)	Perfect
5	Open reduction fracture of both bones of forearm	Perfect
1	Amputation of forearm	Perfect
1	Closed reduction fracture of elbow	Perfect
2	Closed reduction fracture of elbow (compound)	One perfect one unsatisfactory in a child aged 7
1	Reduction of dislocated elbow	Perfect
1	Fracture of olecranon	Patient an obese nervous woman in whom the landmarks were very obscure anesthesia unsatisfactory
3	Amputation of arm above elbow	Two perfect one satisfactory
1	Interscapulothoracic amputation for tuberculosis of shoulder joint	Combined with cervical plexus block and paravertebral blocks of the second to eighth intercostal nerves the brachial plexus was exposed with local infiltration and injected under direct vision at the preliminary ligation of the subclavian vessels the anesthesia was good for two hours after which the operation was completed in fifteen minutes under nitrous oxide anesthesia

Four methods of approach have been described for blocking the brachial plexus the paravertebral by Kappis, the supraclavicular by Kulenkampf, the infraclavicular by Louis Bazy, and the axillary by Hirschel Of these methods, the supraclavicular approach of Kulenkampf offers the greatest advantages and is the only one with which I have had personal experience The anatomic landmarks are better defined than with the paravertebral approach, and there is far less danger of encountering blood vessels than with the infraclavicular and axillary methods

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[1] Livingston E M and Wertheim Hippolyte Brachial Plexus Block Its Clinical Application J A M A 88 1465 (May 7) 1927

[2] Farr R L Practical Local Anesthesia Philadelphia Lea & Febiger 1923

Kulenkampf described the supraclavicular approach in 1911 Braun[3] has given an account of the development of the procedure, and a clear description of the technic may be found in Labat's[4] book on regional anesthesia I have followed Labat's directions with little variation in my forty-three cases with the results shown in the accompanying table

In this series untoward effects attributable to the injection of from 10 to 20 cc of 2 per cent procaine hydrochloride with epinephrine were not observed Instances of subsequent paresis or paresthesia of the arm were not noted In all cases, an attempt was made to obtain paresthesia in the arm before injection of the procaine hydrochloride solution When this was successful, the anesthesia was certain When paresthesia was not obtained after gentle probing with the needle, the procaine hydrochloride was injected more widely in the vicinity of the plexus, beneath the deep cervical fascia and over the first rib This type of injection will in most instances give a satisfactory anesthesia, provided operative procedures are delayed about half an hour On the other hand, the only incomplete anesthesias of the series occurred in those cases in which paresthesia was not obtained before injection It is important that the needle should not be beveled sharply, so that the resistance of the deep cervical fascia may be overcome without definite perception The sensation caused by piercing this fascia is nearly as definite as that evoked when the spinal dura or the external oblique aponeurosis is penetrated

Patients in whom preoperative preparation was possible were given $\frac{1}{6}$ grain (10 mg) of morphine and $\frac{1}{300}$ grain (0 2 mg) of scopolamine This medication usually makes a procedure of any duration much more easily borne It is unnecessary for closed reductions of fractures in ambulatory patients

When a cutting operation is to be performed, I have found it better to augment the brachial block with a "subcutaneous bracelet" of 0 5 per cent procaine hydrochloride just above the site of incision In most cases this may be unnecessary, but the results in some of my first cases showed that the skin incision may be the only painful part of an otherwise painless operation

The injection may be made when the patient is sitting or lying on his back It is better as a matter of routine to keep the patient recumbent for about an hour after the injection The injection of 20 cc of 2 per cent procaine hydrochloride may be followed by symptoms associated with a fall in blood pressure This is especially true when part of the solution has been deposited within a blood vessel This effect of procaine hydrochloride outlasts the opposite transitory effect of epinephrine, and should be anticipated In my series there was one patient who I thought showed a positive Goetsch test (epinephrine effect in hyperthyroidism) This was a woman who became very excitable, and had a tachycardia of about ten minutes duration immediately following the injection Some patients who were more self-controlled or stoical I have allowed to walk a short distance to a fluoroscopic room

There is one point on which I am not entirely in accord with Livingston and Wertheim They state that "contact with the nerve trunks must be avoided The cords of the plexus cannot be touched by the needle with impunity Shock and injury to the fibers alike are invited by the practice of seeking paresthesias before injecting the anesthetic solution " I have not had any bad effects that I know of from seeking paresthesia The plexus should be sought very carefully The needle disconnected from the syringe, is introduced and inserted in only one direction If the position of the tip is to be changed the needle is partially withdrawn and reinserted in its new position Cooperation with an intelligent patient is necessary The injection is made at the first sign of paresthesia, very slowly, and without moving the needle in a lateral direction Physiologic sodium chloride solution is used as the solvent for the procaine hydrochloride

In brief, brachial plexus nerve block offers a very satisfactory method of anesthesia for any operation on the arm It embodies all the advantages of local over general anesthesia, and is particularly useful in the reduction of fractures While careful attention to the anatomic landmarks and the proper equipment of syringe and needle renders the actual injection technically not difficult, there are three dangers to be guarded against intravascular injection of procaine hydrochloride, injury to the pleura, and injury to the nerve trunks

Severn Apartments

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[3] Braun H Local Anesthesia Philadelphia Lea & Febiger 1924

[4] Labat G Regional Anesthesia Philadelphia W B Saunders Company 1923

FACTORS DETERMINING THE LOSS OF STRENGTH OF CATGUT WHEN EMBEDDED IN TISSUE*

EDWARD L HOWES
NEW HAVEN CONN

It has been customary, since the investigations of Lister to treat catgut in such a fashion as to insure its persistence in the tissues for the time necessary for the thorough consolidation of the wound This has been accomplished in great part by the chromicizing of the gut, and the intensity of the chemical reaction has been tested by the presence or absence of it as determined by histologic examination in the tissues of an experimental animal It is customary to designate the product as ten day, twenty day or forty day catgut or otherwise to indicate the time that it may be expected to persist in the tissue

Notwithstanding this, surgeons have observed under certain conditions that wounds supposedly well closed with such gut reopen, and that the gut has dissolved or has broken It has been assumed that the reopening of the wound was the result of defective gut However, testing of the "batch" by the manufacturer has uniformly revealed normal strength and adequate hardening

EXPERIMENTAL TESTING OF CATGUT

It was with a view to explaining this discrepancy that the experiments described here were undertaken Healthy adult dogs were used, and all operative procedures were carried out under full ether anesthetization and with strict aseptic technic The animals were killed at the completion of the experiment The catgut

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* From the Department of Surgery Yale University School of Medicine

* The expense of this investigation has been defrayed by Davis and Geck Inc

employed was supplied by Davis and Geck Inc, and was selected at random from the "boilable" commercial product

It was thought that the histologic test of the persistence of gut was not adequate, for its strength might be deficient long before it had appreciably changed its appearance as determined under the microscope Consequently, all tests as to the survival of the gut were made by determination of its tensile strength A standard thread-testing machine was used for this purpose, which was sufficiently accurate to register the breaking strength within a maximum variation of half a pound

The first experiments were directed at the persistence of gut in a wound healing without infection The suture was threaded beneath the serosa of the stomach in sufficient length for subsequent insertion in the "thread-testing" machine This site was selected as providing a vascular structure so far removed from the surface of the body that asepsis could be adequately insured Sufficient observations were made on other anatomic structures to ascertain that the results were in general the same[1]

Table 1—*Effect of Saline Solution on Chromic Sutures, Twenty Days at 37 C*

	Normal Strength (Dry) Pounds	After 1 Day (Wet) Pounds	After 2 Days (Wet) Pounds	After 3 Days (Wet) Pounds	After 5 Days (Wet) Pounds
No 3	18.2	15.7	15.3	16.6	14.8
No 2	15.6	13.5	11.5	13.6	12.3
No 1	10.1	8.5	9.7	9.9	9.7
No 00	4.6	4	3.4	3.7	3.2
No 000	5.1	3.4	2.6	2.7	2.8
No 2 plain	20	14	10.5	9.3	9.3

Table 2—*Effect of Blood Serum (15 cc) on Twenty Day Number 2 Chromic Catgut at 37 C*

	Normal Strength (Dry) Pounds	After 1 Day Pounds	After 2 Days Pounds	After 4 Days Pounds	After 6 Days Pounds	After 12 Days Pounds
Sterile serum	15.5	13.5	11.5	9.3	9.3	9.4
Serum infected with Staphylococcus albus	15.7	13	10	8.1	5.1	4

The results of these experiments show that the tensile strength of gut whether plain or chromicized, undergoes a progressive diminution from the time of insertion until its final disappearance The plain gut shows a rapid disappearance, the number 00 having lost half its strength in thirty-six hours (chart 1), and the larger sizes nearly as rapidly With chromicization the decrease of strength takes place less rapidly and with a certain amount of lag at the beginning of the curve Essentially, however, the depreciation in strength can also be represented by a straight line

As the removal of any foreign body is accomplished by the direct action of the intercellular fluids or of the cells, it seemed of importance to study these two factors in relation to catgut Consequently, experiments were performed of which the examples given in tables 1 and 2 are illustrative

It is apparent that the presence of excess fluid alone will depreciate the strength of catgut That this is a physical rather than a chemical phenomenon seems probable because of its rapidity, the nature of the agents employed, and the return to normal strength on drying If the fluid is such as to produce hydrolysis, a chemical reaction, the change is more striking and permanent Gastric juice gives the following results

Catgut within the lumen of the dog's stomach Plain, number 00, 0 and 1, tensile strength, 0 in twelve hours, chromic twenty day, number 1, normal strength, 12 pounds in twelve hours 6 pounds, in twenty-four hours, 2½ pounds, and in thirty six hours, 0

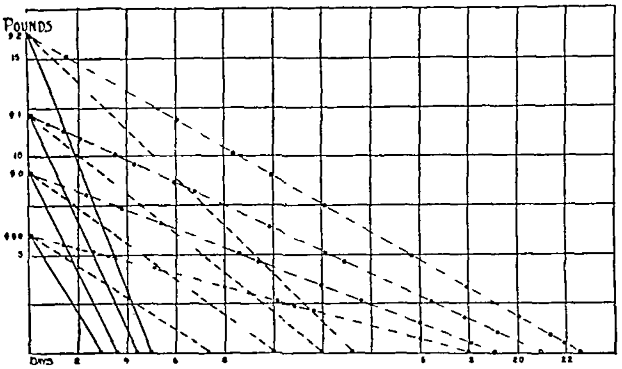

Chart 1—Decrease in the tensile strength of catgut in a noninfected wound solid line plain catgut broken line ten day chromic line with circles twenty day chromic

An exudate consisting almost completely of polymorphonuclear leukocytes can be obtained by the injection of a glucoside, aleuronat, into the pleural cavity of an animal The effect of such an exudate is shown in table 3

The most ready method of duplicating in the experimental animal the infected wound in man is to pass a suture in and out of the skin of the dog, so that portions of it are exposed to the infection occurring at the site of the needle puncture Under ordinary methods of preparing the skin, the infecting organism is *Staphylococcus albus* In such an infected wound, the tensile strength disappears about as rapidly as it does in gastric digestion (chart 2)

COMMENT

The adoption of catgut was in answer to the demand for an absorbable suture as contrasted with an unabsorbable material such as silk, which Lister thought he had demonstrated to be irritative to tissues Attempts at the introduction of the absorbable suture, notably by Young and Physick, were abortive, for the antiseptic and aseptic treatment of wounds was unknown in their time Only after the development of "listerism" was it practicable to bury any type of a suture within a wound, and because most wounds had become surgically clean and healed by first intention, the gut ligature was standardized for that type of healing Therefore,

Table 3—*Effect of Glucoside on Twenty Day Chromic Number 2 Catgut*

	Normal Strength (Dry) Pounds	After 1 Day (Dry) Pounds	After 2 Days (Dry) Pounds	After 5 Days (Dry) Pounds	After 11 Days (Dry) Pounds
Sterile aleuronat exudate changed every day (15 cc at 37 C)	15.5	10	9.5	7.3	3
Sterile aleuronat exudate not changed (15 cc at 37 C)	15.7	11.7	11.8	10.5	7.2
Aleuronat solution sterile (15 cc at 37 C)	16.1	14.2	10.2	10.2	9

In pleural cavity with exudate after twenty four hours 6¼ pounds (10 cc of aleuronat solution injected) the commercial product of today has certain sustained tensile strength in tissues which are not seriously devitalized or infected How well this has been adjusted to the demands of the situation is shown by the experiments illustrated in chart 1

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[1] These experiments will be reported in detail at a later time in connection with studies on the healing of wounds

That it behaves differently under different circumstances is not surprising, and the most important of its characteristics is that it is rapidly destroyed in an infected wound and does not persist to act as a foreign body as do unabsorbable materials This absorbability is due essentially to the fact that the greater bulk of its substance is collagen, which is easily converted into gelatin, and which in turn is broken up into absorbable products Collagen is colloidal in its nature and absorbs water to a remarkable degree, at the same time losing in tensile strength In the tissues, enzymes are carried to the point of irritation and there discharged by the phagocytic cells The amount present is directly proportional to the intensity of the phagocytic action, and that in general to the degree of irritation Catgut in itself is irritative in proportion to the amount present, but under ordinary conditions it is not markedly so When accompanied by pyogenic bacteria for which it forms a nidus for growth it becomes a most potent irritant, as do the bacteria themselves Under these circumstances, the absorption of the gut is greatly intensified, and it is soon reduced greatly in its tensile strength There are then, two factors which must be guarded against if catgut is to function normally First a wet wound Traumatization of a wound leads rapidly to edema and to oozing of serum into the wound as well as into the surrounding tissues The presence of blood within the wound will act in the same manner Incidentally, trauma and hemorrhage are two most important factors in the induction of infection Second, an infected wound It is not necessary in this paper to discuss the measures for the prevention of this condition However, although trauma and hemorrhage can be controlled, infection many times cannot be, and under such circumstances the surgeon must foresee that the catgut may lose its tensile strength and that the wound may open In such instances, the use, in addition of a removable nonabsorbable tension suture is a matter of good judgment If this is not done, disastrous results may occur When a reliable catgut has been employed in the first place such an outcome is not referable to the suture material that was used but rather to the lack of skill and judgment on the part of the surgeon

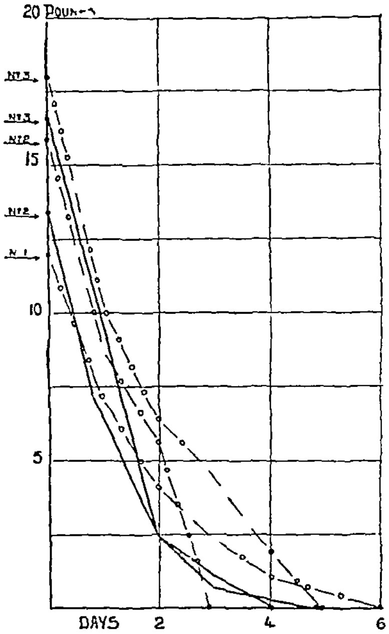

Chart 2 —Decrease in the tensile strength of catgut in an infected wound solid line plain catgut line with circles twenty day chromic

SUMMARY

Surgical catgut in wounds healing by first intention retains its tensile strength to the degree that is customarily expected of it

In the presence of fluids such as physiologic sodium chloride solution, or of blood serum, the tensile strength is moderately diminished

In an inflammatory exudate composed in large part of phagocytic cells, plain or chromicized catgut, practically irrespective of size, loses tensile strength with great rapidity

Great care in handling tissues, strict hemostasis and absolute surgical asepsis are essential in the use of catgut

When infection is foreseen or when the premature loss of tensile strength in the catgut would be disastrous, removable nonabsorbable tension sutures are indicated as an adjunct in the closure of the wound

330 Cedar Street

TUBERCULOSIS AMONG YOUNG WOMEN

PRESENT RELATIVE INCREASE IN THE MORBIDITY AND MORTALITY *

S ADOLPHUS KNOPF, M.D

NEW YORK

In 1927 I [1] ventured to call attention to the relatively greater mortality from tuberculosis among young girls between 16 and 19 as compared with boys of the same age This situation was revealed by the New York statistics

Since the publication of that article I have learned that in other large cities there has also been observed an increase in the morbidity and mortality of tuberculosis among young women A general verification of this comes to us from Dr Dearholt of Milwaukee who, a few months ago, reported that for the first time in the history of the Wisconsin Tuberculosis Association all the state's twenty sanatoriums are filled with patients, with long waiting lists at many of them, this situation being due to the increase of tuberculosis among young girls Concerning the actual tuberculosis mortality among young women, I was fortunate enough to obtain accurate and recent statistics through the courtesy of Mr J G Drolet of the New York Tuberculosis and Health Association, which show that for last year the mortality from tuberculosis among young girls between the ages of 16 and 19 was nearly twice as high as among the boys In the year 1926 in New York City there died from all forms of tuberculosis 257 girls and only 139 boys between the ages of 15 and 20 and between the ages of 20 and 25, 369 women and 293 men From the very complete statistics kindly furnished me by Dr Matthias Nicoll, Jr, the New York State Commissioner of Health, the difference between New York City and the rest of the state in the movement of the tuberculosis mortality among young people during the last twelve years is shown by a comparison of the average annual decline of the death rate (percentage of the average annual rates) New York City—15 to 19 years males, 7 4 per cent, females, 7 6 per cent, 20-24 years males, 6 1 per cent, females, 4 1 per cent Rest of state—15 to 19 years males, 4 9 per cent, females, 1 3 per cent, 20 to 24 years males, 5 5 per cent, females, 2 3 per cent

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* Read before the Medical Society of the County of New York D 19 1927 and before the Third Race Betterment Conference at Battle Creek Mich Jan 4 1928

[1] Knopf S A Essentials in the Prevention of Tuberculosis in Infancy and Childhood J A M A 88 1038 (April 2) 1927

In Baltimore the tuberculosis death rate among the female white population between the ages of 15 and 19 during the years 1910-1926 was 145 for 100,000, while in the males at the same age it was 115 Between the ages of 20 and 24 the difference was still more pronounced, being 235 in the female and only 180 in the male

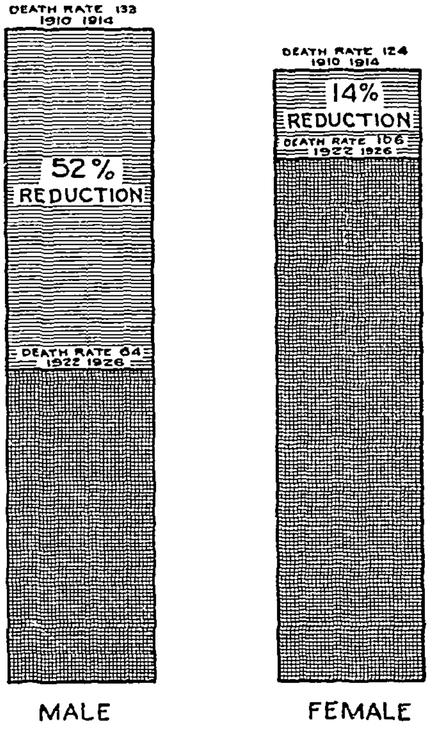
Concerning the death rate from tuberculosis in Cleveland, Howard W Green [2] makes the following report

> Because so large a percentage of the female deaths are due to tuberculosis between the ages of 15 and 30 years and because of the fact that between 1910 and 1926 a similar reduction to that of the male was not experienced in the female death rate for the age groups 15 to 19 and 20 to 24 years concentrated efforts must be directed toward the consideration of the causes and prevention of tuberculosis with special reference to girls between 15 and 25 years of age
>
> The death rates for the male and for the female between 15 and 25 years are much the same up to the year 1918 but since that time the male death rate has decreased much more rapidly than the female death rate This reduction has placed the male death rate at the present time lower than the female death rate The average female death rate of 124 for this age group for the years 1910 to 1914 was reduced to 106 for the years 1922 to 1926, a decrease of 14 per cent while the male death rate, which was 133, was reduced to 64 a reduction of 52 per cent, during the same period These reductions are shown graphically in the accompanying chart

In view of claims that the general morbidity and mortality of tuberculosis have been decreased by more than 50 per cent during the last thirty-five years, these comparative reports are decidedly depressing Dr Dearholt ascribes the increased mortality among girls between 15 and 25 to the flimsy modern dress and he thinks that the mortality from tuberculosis among young women would be cut down if dress reform could be encouraged There is no doubt that Dr Dearholt is right in his belief that insufficient protection of the body by suitable clothing is in a measure responsible for the contraction of so-called colds due to invasion by *Micrococcus catarrhalis* or the influenza or pneumonia germs The field for the ubiquitous tubercle bacillus is thus prepared However, I believe that besides this chilling of the body by insufficient clothing there are other reasons for the increase of tuberculosis among young women

There is first the almost insane desire of so many of them to have a slender figure To attain a boyish appearance, they will voluntarily submit themselves to actual undernourishment Very many of those who have fallen victims to tuberculosis have been hard-working employees in factories workshops or offices, with good appetites but who, in order to lose or not put on any weight, content themselves with an ice cream cone, a cup of coffee or a sandwich at luncheon time, hastily swallowed They do not make up by a substantial breakfast or a good dinner for what they have missed at luncheon The result is inevitably a strong predisposition if not the development of a hitherto latent tuberculosis Of course, the heartless or thoughtless employer who does not allow his employees a reasonable time for luncheon is also to blame for these hasty and scanty meals

To the flimsy dress there is added the tightly laced brassiere or wide elastic band, tightly adjusted over the breasts to increase the boyish appearance and the stooping attitude particularly affected by high school and college girls This posture (college slouch) and the restriction of the respiratory movement by brassiere or band results in an insufficient amount of air entering the upper lobes and apexes Excessive cigaret smoking [3] and insufficient sleep because of too much night life are contributing factors not only to the development of tuberculosis but also to other infectious or nervous diseases No one would wish to deny all pleasure to the hard working girl, but extremes must be avoided in order to retain health The continued compression of the mammary glands may also seriously prevent their natural physiologic development and inhibit their function when the young woman becomes a mother



A comparison of the reduction of the male tuberculosis death rate per hundred thousand with the female rate for the age group 15 24 years between 1910 and 1914 and 1922 and 1926 at Cleveland white

It would be obviously unfair not to state that the increased sick rate among our young working women is also due to the fact that so many of them work and live in unhygienic environments Many a catarrh or more serious trouble of the respiratory system has been contracted in the overheated dry atmosphere of office or workroom, the latter in addition often dust laden Winslow of Yale has definitely shown that 66 5 F in classrooms showed 18 per cent less respiratory diseases among pupils in attendance than when the average temperature was 68 5 F When the temperature in workroom or office exceeds 68 F, something should be done No office, class or workroom should be without a thermometer Where the workers are exposed to the inhalation of too much vegetable or mineral dust, the installation of modern electric dust collectors should be made obligatory by law In all large centers, associations for proper housing of working girls should be active and publicly and privately supported

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[2] Green H W A Graphical Analysis of the Trends in the Tuberculosis Death Rate, Cleveland Health Council 1927

[3] Freudenthal Wolff Tobacco Its Relation to the Upper Respiratory Tract Laryngoscope 37 217 (March) 1927

A somewhat more remote cause of the frequency of tuberculosis among young girls, and also boys, is the utter lack of sanatorium facilities for the adolescent Obviously, children between 12 and 15 cannot be kept in preventoriums where both sexes are treated prior to adolescence, and because of their youth they are not admitted to sanatoriums for adults Another remote but not less important cause that must be borne in mind if we really wish to conquer tuberculosis is the almost total absence of infantoriums, that is to say, institutions where children of tuberculous parents, so often predisposed to the disease, if not already infected, can be treated from the earliest possible moment after their birth until they are cured or their predisposition mastered Calmette's[4] method of immunization is a harmless and seemingly very effective means to help solve the problem concerning tuberculous infants, while treatment of course can best be carried out in an institution

The first typical infantorium was made possible for the states of New York and New Jersey by the efforts of Dr Alfred F Hess at Farmingdale, N J, but the enterprise had to be abandoned recently for lack of funds Yet, to my mind,[1] such infantoriums should be in operation at least in all large centers of population

A healthy foster mother may be the ideal for a child born by a tuberculous mother, but such foster mothers are hard to procure A child predisposed to tuberculosis, or having it in a latent form, may reach adolescence without the slightest symptoms of the disease, but if at that time it is subjected or subjects itself to malnutrition, insufficient clothing, hard work, irregular hours and insanitary environments in general, tuberculosis is almost bound to develop

To remedy the serious situation manifested by the increased morbidity and mortality of tuberculosis among young people, particularly the girls, reliance must be placed on the family physician, who should do all he can to counteract the foolish desire to grow thin to the detriment of the general health and endurance He should insist on rational dress according to season and the avoidance of all chest-restricting bands

Annual physical examination of all the members of every family should become an indispensable custom and it is to be hoped that it may become obligatory in the near future However my experience with tuberculosis has taught me that an annual examination of individuals between the ages of 15 and 30, the most susceptible age when our death rate from that disease is highest, is not sufficient There must be a careful semiannual health examination if we would wish to decrease tuberculosis among the young persons, and particularly among the girls, where the tuberculosis morbidity and mortality is really alarming I have discovered distinct physical signs, accompanied by slight but characteristic symptoms, indicating an early tuberculous invasion, in young people who had been declared in perfect health by skilled examiners seven or eight months before To counteract the slouchy, bent-over posture, let these young people be impressed with the fact that to walk, stand and sit straight, to assume a proper posture all the time, is not only more healthful but more becoming When the work of the young women demands sitting, employers should see that properly constructed chairs are provided These young girls must also bear in mind that well developed breasts are an addition to a graceful figure and that when motherhood comes they will be in a better condition to nurse their children Some young women carry their desire for a flat chest to such an extent that they are afraid to take a deep breath They should be taught that, particularly when outdoors, to breathe deeply and do it often is the best way to develop good, sound lungs Let them, above all, realize that a little overweight at their age is not as dangerous as 10 or 15 pounds underweight, and that a good appetite at noon time should be satisfied Employers should give their employees at least forty-five minutes or, better yet, one hour for luncheon

While the moderate exposure of the throat and the upper anterior portion of the chest may not be at all injurious and perhaps even advantageous in hardening the system against "contracting colds" (our sailors dress similarly in the coldest weather), the exposure of the shoulders and arms is doubtless often responsible for chilling the body in cold weather The style of evening dresses worn by women of leisure, and also frequently by working girls, is doubtlessly responsible for many a bronchitis or more serious pulmonary trouble These modern evening dresses are not only decollete in front but often expose almost the entire length of the spinal column, with its relatively thin covering of muscular layers The extreme shortness of the women s everyday dress, the thin silk stockings and low shoes, worn in the coldest weather while the other portion of the body is wrapped up in thick woolen or fur coats, must also be considered a contributing factor to the deplorable death rate among young women The narrow skirt and the absurdly small but very high heel on the otherwise low shoes are of course a great hindrance to the natural gait The high heel is responsible for many a twisted ankle and often more serious orthopedic trouble A vigorous walk in the fresh air, which every indoor worker should take at least once a day, is made utterly impossible with such absurd footgear

Unfortunately, the majority of families are not seen regularly by a physician who could give advice for the prevention of disease, and even if there is a family physician he is rarely consulted until there is real trouble, when rouge and lipstick can no longer hide the anemic condition, the cough cannot be suppressed, the loss of weight becomes emaciation, and other symptoms make a serious state of health evident to family and friends To solve a problem of such magnitude as the situation presents, it requires not only a semiannual health examination and sound medical advice, but also the cooperation of the mature and sensible women in every calling, who, by their manner of dress and bearing, should show the fallacy of the dress and manners so many young women seem to be addicted to nowadays While the present mode of women's dress has many advantages over most of those of the past, the long trailing skirts, the many petticoats, the flannel underwear, extremes in either direction should be avoided[5] Kindly advice by mothers and also by teachers, ministers, directors or girls' scouts and officers of girls' clubs may accomplish much toward a rational dress reform, and thus aid the medical profession in its desire to prevent the alarming morbidity and mortality from tuberculosis among our young women

Among girls in high schools and colleges, where the curriculums are often so extensive as to be detrimental to good physical and mental development, reform in this direction is also an urgent necessity

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[4] Calmette Albert Premunition des enfants nouveau nes contre la tuberculose par le vaccine B C G Ann de l Inst Pasteur 40 89 (Feb) 1926

[5] Knopf S A Dress Reform in Its Relation to Medicine South California Pract 4 345, 1888

Lastly, well meaning and well-to-do fellow citizens should aid municipal authorities in the establishment of infantoriums for the offspring of tuberculous parentage, and preventoriums for the adolescent of both sexes, also sanatoriums for adults where these do not already exist, so as to accommodate all the consumptive poor and those of moderate means who cannot be successfully treated at home Let us do all we can to save the hard working girl from an untimely death from tuberculosis But she too must do her share and learn to lead a healthful and normal life Thus my plea is for and to the young women of America, the future mothers of the nation May it not be in vain

16 West Ninety-Fifth Street

AN EPIDEMIC OF ALBUMINURIA*

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WASHINGTON, D C

Army Regulations 40-105, "Standards of Physical Examinations," prescribe that "the term 'albuminuria' will not ordinarily be used as a cause for rejection nor does its presence alone justify a diagnosis of nephritis When albumin is constantly or intermittently present the underlying pathological condition must, if possible, be determined and stated as the cause for rejection, but if albuminuria is present daily during a period of six days it should be stated as the cause of rejection, even if the origin cannot be determined" (par 82)

No exception is taken to the provisions of this regulation but it is thought that some good and physically sound men, as well as the seriously diseased, may be excluded from West Point and from the army by the application of the last sentence quoted This opinion is based on the experience of annual physical examinations of officers and cadets at West Point in the years 1924, 1925, 1926 and 1927 It is also believed that medical men in general do not realize the occasional prevalence of albuminuria in otherwise healthy men or its frequent insignificance For these reasons, the account of the experience at West Point in the years indicated is believed to have a general value Without attempting a broad summary of the extensive literature on albuminuria it may be stated that certain writers have from time to time called attention to the high incidence of the symptom in certain groups, and I cite a few of those whose articles have appeared and come under my observation during the period covered by the experience here reported

McNabb and Field[1] report three examinations, within a period of two weeks, on 417 men of from 17 to 24 years of age The urine of 45 per cent of these young men showed albumin, when heated and tested with acetic acid, on at least one examination In 4 5 per cent there was "persistent' albuminuria, that is, it persisted during two weeks These authors found evidence of impaired function in such cases They also found the appearance of albuminuria related to exercise Neither of these things was usually true in the series here reported

Thomas Addis,[2] in discussing the clinical classification of nephritis, tells of the hemorrhagic forms of glomerular nephritis which often escape notice and may clear up entirely This type may include some of the cases of albuminuria here reported

J W Russell[3] calls attention to the fact that orthostatic albuminuria is frequently a phase of scarlatinal or diphtherial and possibly other forms of nephritis, the sequence being constant albuminuria, orthostatic, none This sequence has been observed in some of our own cases of albuminuria of unknown cause

George Baehr[4] writes of the benign and curable form of hemorrhagic nephritis often associated with sore throat, and says that the urine may be normal except for the presence of albumin and blood cells, the kidneys able to concentrate urine, the patient's general condition good, the blood pressure normal, edema absent, and the blood tests, Mosenthal tests and phenolsulphonphthalein elimination all normal Baehr thinks that tonsillectomy offers excellent prospects of cure, although it may result in increase of blood in the urine for a day or two Some of our patients with similar cases of albuminuria have been subjected to tonsillectomy and in a few the condition has cleared up afterward The proportion of cases, however, in which there was recovery has not been higher nor the time required for recovery less than in cases in which tonsillectomy was not performed, and most of our cases do not appear to have any relation to tonsillitis, although otherwise like Baehr's cases

Calvin, Isaacs and Meyer[5] write of the prevalence of albuminuria in children They quote Laucher as having found that in 5,000 children 6 7 per cent of those from 6 to 7 years of age, 27 per cent of those from 10 to 11 years, and 38 per cent of those between 15 and 16 years showed albuminuria Calvin and his associates report on two groups of children One group consisted of children from 2 to 16 years of age and having poor care, 60 per cent of whom showed albuminuria The other group was of children from 6 to 16 years of age and having excellent care, only 15 per cent of whom showed albuminuria The authors classify benign albuminurias as (*a*) malnutrition albuminuria often associated with anemia, underweight and basal heart murmurs, and frequently due to focal infections, (*b*) orthostatic albuminuria, related to posture and (*c*) idiopathic or "growth" albuminurias, including those described as juvenile pubertal, cyclic, transitory or intermittent

It is not believed that any case in our series could be attributed to malnutrition, very few cases were orthostatic, and it seems probable that the so-called pubertal juvenile, growth, transitory, intermittent albuminurias are not different from the equally temporary and harmless albuminurias found in older persons with considerable frequency

Philip S Hench[6] says that 5 per cent of 60,000 healthy soldiers and 5 per cent of 5,000 healthy students presented albuminuria, while among the sick the ratio is much higher being 39 per cent in the Mayo Clinic, although only 40 per cent of these had any renal lesions He says that functional albuminuria includes mainly that appearing in healthy persons after exercise and exposure to cold, and orthostatic albuminuria, but that prostatitis may occasionally cause it Such is not apparently the case in the series here reported

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[1] McNabb, P E and Field C W Mil Surgeon **55** 73 (July) 1924

[2] Addis Thomas Clinical Classification of Bright s Diseases J A M A **85** 163 (July 18) 1925

[3] Russell J W Lancet **2** 683 (Oct 3) 1925

[4] Baehr George Benign and Curable Form of Hemorrhagic Nephritis J A M A **86** 1001 (April 3) 1926

[5] Calvin J K Isaacs Bertha L and Meyer Jacob Albuminuria in Children J A M A **86** 1821 (June 12) 1926

[6] Hench P S Practical Considerations of Renal Physiology and Function J A M A **87** 8 (July 3) 1926

Girard[7] reports two cases of well established orthostatic albuminuria in young women, each with a history of observation extending over a period of years, in which the condition entirely disappeared with pregnancy, while the patients were being watched with special care The condition was ameliorated early and permanently Girard thinks the trouble not due entirely to posture but probably in large part to some lack of development which was overcome by the rapid development resulting from the pregnancy Possibly the moderate excess of incidence of albuminuria in young persons is due to developmental delay of unknown causation

THE HUMAN MATERIAL CONSIDERED

The observations here reported were made on officers and cadets at the U S Military Academy at West Point The average number of officers was very close to 200, the cadets numbered 1,150 About 25 per cent of the personnel changes annually

All are men who were originally selected as sound and free from disease, all are required to have an annual physical examination of a searching character, and all are entitled to and receive free medical treatment, in the hospital if the condition is of any severity All are well fed, well clothed and well housed, and all take regular exercise The officers live in their quarters and do much as they please Cadets live in barracks and their hours are regulated to a degree unknown in civil life, the use of all hours from 6 a m to 6 a m being prescribed by schedule as classroom periods, study periods, exercise periods (gymnasium or outdoor athletics), drill periods, meal periods, hours for sleep, and free time, which last may be spent as the cadets desire They are not allowed to go outside prescribed limits They eat in a common mess and their food is good and abundant, the allowance for raw food being 80 cents per man daily exclusive of the cost of preparation and service Smoking is permitted and is general, drinking is prohibited and is rare The cadet's habits and environment are much above the average for college men, so far as factors believed to be disease-producing are concerned

Officers varied from 25 to 64 years of age, the majority being between 30 and 40 years Cadets were from 17 to 25 years of age, the average being 20 or 21 years

The tests used were the nitric acid contact test and the heat and acetic acid test, neither remarkably sensitive

TIME OF EXAMINATION

Army regulations prescribe that the annual physical examinations shall take place in January or as soon thereafter as practicable The officers were always examined in January and the cadets in February, March and April of 1924, 1925 and 1926 In 1926, authority was obtained to change the examination of cadets so as to make that of two classes, the first and third (corresponding to senior and sophomore classes in college) come in the month of August, when both classes are in summer camp This was done for the reasons that the late winter and early spring months are seasons of much sickness and of hard academic work, and therefore times at which physicians are unusually busy, even without the burden of work occasioned by these examinations, and cadets are particularly apt to suffer from eyestrain and to make unusually poor showings in the tests for vision, while examinations in August come when physicians have more time and cadets have been freed from academic work for two months Furthermore, it was thought that season might be influential in the causation of albuminuria The results of the August examinations in 1926 were such as to lead me to have additional examinations made of the urines of men of the fourth class in the autumn of 1926 I am therefore reporting from two to six examinations on each of the 1,115 cadets at the academy, Jan 17, 1927, and one examination each on the 405 men who graduated in 1924, on the 245 who graduated in 1925 and on the 152 who graduated in 1926[8]

I am also reporting on from one to four examinations on each of 352 officers The total number of persons concerned is therefore 2,269, all examined when doing duty and apparently in good health The number of routine examinations of urine (not counting those made during hospitalization or periods of special observation or study) was 5 855, prior to August, 1927

Of all these, 360 men showed albumin 440 times Almost 16 per cent of all these men had albuminuria at some time, slightly more than 7 per cent of the specimens of urine examined showed it But it should be noted that five sixths of all cases occurred in the two years 1925 and 1926, and almost two thirds in 1926

In 1924, albuminuria was not noticeably prevalent The retained records of 177 officers examined that year do not show any instance of albuminuria, but, as some retained records are incomplete, it cannot be stated that there was none If any, the cases were few

In the first class of cadets at that time, consisting of 406 men, two had intermittent albuminuria, without casts or blood on microscopic examination In the fourth class at that time, now the first class, only one man of the 206 now remaining then showed albuminuria In a total of 612 cadets there were only three cases of albuminuria, and the incidence rate among officers was probably no higher

In 1925, twenty-one officers, or 10 8 per cent, and 5 per cent of cadets showed albuminuria on the first examination One of the officer cases was known to have presented albuminuria since 1923, and to show a fixed low specific gravity and moderate nocturnal polyuria His case is not considered as belonging to the large group discussed

At the time of the annual examination of 1926, the condition was even more prevalent among cadets It appeared to be epidemic, and in April, I reported in regard to it as follows

> For reasons at present unknown or at most surmised there has been a very large amount of albuminuria at West Point this year Eleven per cent of officers showed it on their annual physical examinations and 17 per cent of the first class As the condition was or is intermittent in almost all cases and as a man showing a normal urine on the first examination did not have the urine reexamined it is probable that the number having the condition at some time was considerably larger While I do not know the cause of this unusual prevalence of albuminuria, I am at present inclined to think it due in large part to exposure to cold I have considered the following as possible causes
>
> (*a*) Posture This has received special attention during the past year and should be less apt than in previous years to cause albuminuria which is this year more prevalent than last, in the proportion of 17 to 5 The urines were passed just after breakfast

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[7] Girard A and others Presse med **34** 1234 (Oct 6) 1926

[8] *Since this paper was written additional examinations have been made on the men of the classes of 1928 and 1930*

(*b*) Diet The diet of cadets is good, abundant and nourishing It is the same this year as last, except that fewer eggs have been used for breakfast

(*c*) Colds and influenza were prevalent at the time of the annual physical examination, but the men with albuminuria showed no higher rate of such infections than did the corps in general, and no more resort to sick report

(*d*) Exercise The examinations were made in February and March Concerning the amount of exercise then taken, the Acting Commandant informs me that it was less than that taken in September, October, April and May, when intramural athletics are in force, less than in July and August, and probably slightly more than is taken in November, December and June The percentage of men on athletic squads who showed albuminuria was somewhat smaller than the percentage of the corps as a whole

(*e*) Exposure to cold The cadets usually pass from barracks to class, class to barracks, and elsewhere in their daily walks, without overcoats, for the reason that the overcoat is so tight-fitting and cumbersome that they need assistance to get it on and they regard it as a nuisance The season of the annual physical examination was this year colder than last and was generally the coldest of the winter Reflex disturbance of kidney circulation by alternate exposure to high and low temperatures at present seems the most probable cause of the albuminuria

As has been stated, permission was soon afterward obtained for examining the first and third classes in camp The examinations were made in August, at a time of unusually hot weather, with the result that the idea of the trouble being due to exposure to cold was promptly knocked into a cocked hat, as albuminuria was found much more prevalent in the first class than in the spring In the third class there was about three-fifths as much as there had been in the spring The fourth (plebe) class was then examined in order to get larger figures and it was found to show exactly twice as many cases of albuminuria as on entrance examination the preceding March At both seasons of the year the more persistent cases were taken into the hospital for study The observations will be considered later

In the spring of 1927, three classes were again examined, only twenty-six cases being found among 784 cadets At the same time, there were seven cases among 205 officers The epidemic had largely subsided[9]

GENERAL CHARACTERISTICS OF EPIDEMIC

Duration—In the large majority of instances, more than 80 per cent, the albumin was found in only one of these periodic examinations It was found twice in 16 per cent of the cases and more than twice in 4 per cent Among sixty-four cadets showing albumin at more than one examination, in only ten instances were positive results separated by a negative one In all other cases positive results were obtained at consecutive periodic examinations

Of the officers who had more than one examination, thirty-two showed albuminuria on only one examination, ten showed it on two and one on three, the multiple observations being obtained in all instances on consecutive examinations It may be said, then, that the symptom is usually of brief duration, that in one sixth of all cases it may persist for six months or a year, and that in about 4 per cent of cases it may last longer One of our cadets was known to have it in 1923, 1925, 1926 and early in 1927, after which it became intermittent and infrequent and by May, 1927, it had entirely disappeared

Microscopic Observations—In the large majority of instances the microscopic examination is recorded as "negative", in many it is not recorded and was presumably normal However, hyaline casts alone were noted in forty-one cases, hyaline and fine granular casts in forty-one cases, granular casts alone in fourteen, casts (not described) in one, red blood cells in fifteen, and spermatozoa in ten Mention is made of the spermatozoa because one well informed medical officer expressed the opinion that seminal emission is often followed by albuminuria It does not seem important in this series When spermatozoa occurred the other conditions were negative, neither casts nor blood being noted Blood was once present in one case in sufficient quantity to tinge the sediment In all other cases it was detectable on microscopic examination only

Other Observations—It was customary, when albuminuria was found, to have the officer or cadet bring new specimens on five successive days If the majority of these were negative and if the person was not a cadet of the graduating class, it was customary to stop examinations until after six months or a year If albumin was present in all specimens, if blood cells or casts persisted or if the person was to graduate in a few months, he was taken into the hospital for more complete study, which included repeated careful physical examinations with special care in examining the teeth, tonsils, sinuses, genital organs and glands, in the measurements of the urine, in orthostatic tests, in the Mosenthal test, in phenolsulphonphthalein elimination tests and, in some cases, in a chemical determination of the blood sugar, urea nitrogen, uric acid and creatinine

About thirty patients were taken in for such study and, except that three were found to have orthostatic albuminuria, some had had large or infected tonsils removed, and two or three single phenolsulphonphthalein elimination tests were below 50 per cent, the studies resulted negatively and indicated good kidney function in all cases

Blood Pressure—Blood pressure was normal in practically all of these cases in cadets One man who has always shown a relatively high or unstable pressure (from 140 to 160 systolic) showed albumin at the entrance examination, but none at any of five later examinations There have been two cases of severe essential hyperpiesis but they were not albuminuric

Among officers showing albuminuria, only two have shown a systolic pressure as high as 140 One of these officers, now 34 years of age, showed albuminuria one year in four The blood pressure at that time was 140 systolic and 92 diastolic

The other, now 51 years of age, likewise had albuminuria one year in four His blood pressure ranges from 140 to 160 systolic, and from 90 to 96 diastolic The average blood pressure for fifty-one officers showing albuminuria in 1925, 1926 and 1927 was 126 systolic and 75 diastolic

Tonsillar Infection—Such infection is apparently without influence on the occurrence of the trouble Tonsillectomies were performed on 143 of the officers and cadets covered by this report Twenty-four, or 17 per cent, of them had albuminuria at one or more physical examination periods Twenty of these showed it after operation and only eleven before Seven of these eleven showed it both before and after operation, and four before and not after On the other hand, thirteen persons showed it six months or more after tonsillectomy and not before the operation

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[9] In August 1927 the present first and third classes numbering 530 men were again examined No man in the first class showed albuminuria and only ten in the third class so that the total incidence at that time was less than 2 per cent

Of several patients subjected to tonsillectomy for the relief of albuminuria, not one was influenced to the extent that the albuminuria cleared up within six months

Treatment—None of the patients, other than those having the tonsils removed, received any treatment for the condition Some of them underwent self-imposed restrictions of diet the restriction usually being in flesh foods or salt, without noticeable effect

REPORT OF CASES

Case histories in brief of seven of the more persistent cases are as follows

Case 1—A cadet, examined in March, 1923, before admission to the *military academy*, was found to have albuminuria, without casts or blood The following year albuminuria was not noted, but at all subsequent examinations it was found This cadet has been carefully studied at various times When he was admitted to the hospital in May, 1925 he was in apparently robust health His height was 73½ inches (185 5 cm), his weight 175 pounds (79 4 Kg) and the blood pressure 128 systolic and 70 diastolic Physical examination was negative except for a persistent trace of albumin in the urine, and occasional granular casts Phenolsulphonphthalein elimination was 45 per cent in two hours The Mosenthal test was normal The blood uric acid nonprotein nitrogen, sugar and creatinine were all normal Albuminuria was not orthostatic

The patient was admitted to the hospital again, Sept 6 1925, still in excellent general condition The blood pressure was 104 systolic and 66 diastolic Albumin was constantly present but casts were found only once in twenty examinations The Mosenthal test gave normal reactions, phenolsulphonphthalein elimination was 40 per cent in two hours, the blood uric acid sugar, creatinine and nonprotein nitrogen were normal, the Wassermann reaction was negative, all surveys, including examinations of the teeth sinuses heart, eye, ear nose and throat, stool and blood were negative Albuminuria was not orthostatic

The patient was readmitted for further study April 26, 1926 At this time, the albuminuria was orthostatic albumin being present in all evening urines and absent from all urines passed immediately on rising in the morning Phenolsulphonphthalein elimination was 60 per cent The Mosenthal test was normal Five specimens of urine taken from March 16 to March 20 were all normal The cadet was readmitted, March 28 1927 His general condition was excellent The urine showed a trace of albumin in three of eight specimens recorded Albuminuria was orthostatic, with no casts or blood in any specimen The Mosenthal test was normal, and phenolsulphonphthalein elimination was 65 cent in two hours All surveys were negative Analysis of the blood in terms of milligrams per hundred cubic centimeters showed blood sugar 159 mg , nonprotein nitrogen, 30 mg , creatinine, 1 2 mg , uric acid, 28 mg

In May, 1927, this case had cleared up to the extent that no albumin was found on any of numerous examinations

Case 2—A cadet, while in the hospital on account of acute, nonsuppurative myringitis was found to have albuminuria in February 1926 Blood was seen when the urine was examined microscopically In September, 1926, when the patient was reexamined the urine still contained traces of albumin in twelve of fourteen specimens, five of which also showed occasional red blood cells He was examined monthly thereafter on five successive days each month, and the urine showed albumin in all specimens up to January, and red blood cells in most Of five specimens taken in January, four showed albumin and two red blood cells No blood cells were present in February Three of five specimens examined in March, 1927 showed traces of albumin but none showed blood

When he was studied in the hospital in May 1926, the patient was found to have a periapical abscess of a lower right molar and the tooth was removed Blood counts were normal and examination of the ears and sinuses was negative, the urine contained albumin and blood The Mosenthal test gave normal results, phenolsulphonphthalein elimination was 60 per cent in two hours, the blood creatinine, nonprotein nitrogen, sugar and uric acid were all normal

Case 3—*In a cadet examined in the spring of 1926,* albuminuria was detected It was still present in August, and the cadet was then taken into the hospital for study Of fourteen specimens of urine examined, ten contained traces of albumin and two contained a few fine granular casts The Mosenthal test gave normal reactions but phenolsulphonphthalein elimination was very high, reaching 90 per cent in two hours The general condition of the cadet was excellent Examination of five specimens each month gave the following results

October, five specimens showed albumin, but no casts
November, four specimens showed albumin, but no casts
January, four specimens showed albumin, but no casts
February, four specimens showed albumin, but no casts
March, two specimens showed albumin, but no casts

Case 4—At the annual physical examination of a cadet in March, 1926, albumin was first noted It was still present in September and the cadet was taken into the hospital for study The general health and physical condition were excellent The urine constantly contained albumin, except in three or four specimens passed immediately on rising Hyaline casts were found once The Mosenthal test indicated normal function, and phenolsulphonphthalein elimination was 40 per cent in two hours Monthly examinations of five day specimens showed in October, two specimens containing albumin, without casts or blood, and in November, three specimens containing albumin, without casts or blood

November 29 the cadet was scuffling with a friend and was struck in the right hypochondrium by the friend s elbow A swelling resulted with profuse hematuria which lasted for several days but all traces of it disappeared in two weeks Since that time the urine has shown a trace of albumin only once, although examined five times monthly

Case 5—At the examination of a cadet in February, 1926 albuminuria was first detected Blood was present in sufficient amount to tinge the sediment and coarse granular casts were numerous, for which reasons the cadet was taken into the hospital at once for study There were no subjective symptoms and the cadet looked and felt well All physical examinations and surveys were negative Blood pressure was 136 systolic and 70 diastolic Blood counts were normal Two Mosenthal tests gave normal results, and the blood sugar, nonprotein nitrogen uric acid and creatinine were all normal The amount of blood and numbers of casts diminished rapidly, and on March 16, the cadet returned to duty with intermittent albuminuria, and all specimens for the preceding week free from blood cells or granular casts

When readmitted to the hospital in May the cadet still looked and felt well Albuminuria was intermittent, and the microscopic examination was negative except for occasional hyaline casts Phenolsulphonphthalein elimination was 65 per cent in two hours, and the Mosenthal test gave normal results

When the patient was studied again in September 1926 he was found to have traces of albumin in all specimens of urine but the microscopic examinations were uniformly negative The albuminuria was not orthostatic The Mosenthal test again showed normal elimination with no fixation of specific gravity and no nocturnal polyuria Phenolsulphonphthalein elimination was 80 per cent in two hours

Monthly examination of specimens of five successive days gave the following results

October three specimens showed albumin without blood or casts

November, five specimens showed albumin, without blood or casts

December, no specimen showed albumin, blood or casts

January, two specimens showed albumin, without blood or casts

February, one specimen showed albumin, without blood or casts

March, two specimens showed albumin, without blood or casts

Case 6—A cadet who did not have albuminuria until August, 1926, had had a tonsillectomy in May, 1926, because of recurrent attacks of tonsillitis and slight impairment of hearing, and in July had had an attack of chilliness, fever headache general aching and malaise, which necessitated hospitalization for five days No albuminuria was noted at that time At the August examination the urine showed a trace of albumin and a few hyaline casts In January, 1927 he was admitted to the hospital with influenza, complicated by pleurisy and bronchopneumonia which developed after admission At the time of his admission the urine did not contain any albumin He was returned to duty in twenty-four days Twelve days later he had a chill, followed by cough and low fever, and was again admitted to the hospital The urine was again free from albumin He was returned to duty in twelve days At the annual physical examination in March he had a trace of albuminuria Of ten specimens of urine passed on different days, six showed traces of albumin and none showed casts April 8 he was again admitted to the hospital, with coryza and laryngitis The urine contained albumin but no casts Mosenthal tests, April 12 and April 15, indicated normal function, phenolsulphonphthalein elimination was 50 per cent in two hours Surveys of sinuses and teeth for focal infections gave negative results

Case 7—A cadet was admitted to the hospital, Nov 2 1924 because of persistent Vincent's stomatitis The urine was found to show a trace of albumin, and he gave a history of having had the condition in 1919, after an attack of pain in the side, which lasted a day or two and was at first thought to be due to appendicitis, but later was ascribed to kidney trouble. He went on a meat-free diet for about ten months but the albuminuria persisted However he had none when he took the examination for entrance to West Point in March, 1923, nor was any found later until this examination in 1924, when it was present in three of four specimens examined In one of these a few hyaline casts were found Roentgen-ray examination for kidney stone was negative Tonsillectomy was performed, Jan 20, 1925 the urine at the time containing a trace of albumin. This was still present at the annual examination in March, and in four of eight specimens examined thereafter It was again present in the spring of 1926 The cadet was admitted to the hospital for study The urine contained albumin and red blood cells Phenolsulphonphthalein elimination was 70 per cent in two hours the Mosenthal test was negative, and the genitalia, including the prostate and vesicles, were normal

Albuminuria was present again in August, 1926 but not in February, 1927 The cadet was nevertheless required to return for an examination of specimens passed on five successive days All of these showed albumin and one contained hyaline casts but none showed blood He was again taken into the hospital, March 28, where seven of eight specimens showed albumin, and none casts The Mosenthal test was normal, phenolsulphonphthalein elimination was 80 per cent in two hours, and chemical analysis showed the blood to be normal

CONCLUSIONS

1 Albuminuria may occur in healthy men without being significant of serious kidney disease Occasionally, as in 1925 and 1926 at West Point, this condition may attain epidemic prevalence

2 The cases discussed all occurred in persons who were doing duty and were apparently well There were neither symptoms nor signs of disease, except in the urine Blood pressure was not disturbed

3 The albuminuria was apparently not related to other disease or disability, nor to food clothing, exercise, weather or season, and only rarely to posture

4 While a large majority of cases occurred in young persons, that was mainly because the large majority of those examined were young The albuminuria occurred at all ages from 17 to 50

5 There is nothing in the series to suggest or support the idea that tonsillar infection was a factor in causing the albuminuria reported

6 The presence in the urine of blood, and hyaline and granular casts was not related to symptoms of disease, to increase of blood pressure or to impairment of kidney function, except moderate reduction of dye elimination in a few cases and apparently did not indicate an unfavorable prognosis

7 The fact that the term nephritis is not applied to these cases is not to be considered equivalent to a statement or a belief that nephritis was not present No case has furnished anatomic material for study If nephritis is present, it is apparently unimportant, its cause is unknown and recovery ensues

8 The "epidemic" cases were usually (84 per cent) of short duration Exceptional cases lasted from six months to a year or more One case, probably not related to the epidemic, lasted four years and now appears to have cleared up

9 Orthostatic albuminuria is sometimes merely a receding phase of a more constant condition, and is a step toward recovery

10 No treatment is recommended

THE ORIGIN OF URINARY PROTEINS*

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AND
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In a recent communication[1] it was shown that uremia could be reproduced in its minutest details in the presence of normal kidneys Suppression of urine was previously shown to occur, not because the kidneys became impermeable but because the water was held in a firmer combination with the colloids of the blood and tissues[2] The nitrogen retention cannot be the cause of nephritic syndromes, as many cases of uremia in which the blood nitrogen values were normal have been reported in the recent literature Again, suppression of urinary excretion per se for very long periods (over three weeks) has not caused uremic manifestations either experimentally or clinically

With these points in view the urinary proteins were studied not only in cases of experimental uremia but in ether nephritides in dogs Small samples were collected every ten to fifteen minutes, and each sample that contained protein was tested against serum from rabbits which had previously been sensitized to dog blood proteins, by the method previously described by Hektoen and Welker[3] Such antiserums will give precipitin reactions with dog blood in dilutions up to 1 1,000,000 With the urinary proteins that we used, no reactions occurred in dilutions of more than 1 10, and in many cases the reactions were negative in undiluted serum More than 100 samples of urine passed in the early stages of our artificial uremia and of ether nephritides were thus shown to contain no blood protein This is true only in the early stages, as later much serum protein is passed

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* From the Surgical Department University of Illinois College of Medicine

[1] Andrews Edmund Experimental Uremia Arch Int Med 40 543 (Oct) 1927

[2] Andrews Edmund Water Metabolism Arch Int Med 36 82 (Jan) 1926

[3] Hektoen Ludvig and Welker W H The Precipitin Reaction of Fibrinogen J A M A 85 434 (Aug 8) 1925

Aside from a few previously reported specimens[4] these are the first urinary proteins ever isolated free from blood protein The previous reported specimens contained blood protein from which a pure crystalline globulin was also obtained The tissue from which these globulins originated could not be determined

Next, antiserums were prepared against dog liver protein Dog livers were perfused, ground in the ball mill sixty hours and repeatedly extracted with water, the protein was then precipitated by saturation with ammonium sulphate, and the precipitate freed of salt by dialysis Dogs were immunized to a solution of this mixture of purified liver and blood proteins, and antiserums developed which gave reactions in dilutions of 1 100,000 against the blood-free urinary protein This antiliver serum also reacted against dog blood in high dilution To this bivalent serum, dog blood was added in varying quantities, until the clear centrifugalized serum did not give any precipitin reaction with dog blood Its reaction against the urinary protein remained as high with the untreated serum, thus precluding the possibility that the first reaction was against serum protein By the same method small amounts of spleen protein were identified in the urine, and the absence of muscle and kidney protein demonstrated

The precipitin test is considered the most accurate method of establishing the identity of specific proteins, and it is safe to assume that these experiments definitely establish the fact that in the early stages, at least, of some proteinurias, the protein is derived from the cellular degeneration of large parenchymatous organs, especially the liver

It was previously suggested that in nephritis a disturbance of the mineral balance caused cellular disintegration to such an extent that protein leaked from the great parenchymatous organs into the blood and was excreted, as it has long been known that nonblood proteins (egg albumin and foreign serums) pass through the kidneys It has also been shown that the prolonged passage of foreign protein through the kidneys renders them permeable to blood proteins These phenomena may account for the fact that in the later stages of nephritis enormous amounts of serum proteins are passed Another possible explanation of the presence of blood proteins in later stages is that it has been shown both clinically and experimentally[1] that as much as 60 per cent of the serum proteins may pass into the tissues, and there, it is suggested, may undergo some slight change in structure or acid salt formation which transforms them just enough to render them susceptible of excretion by the kidneys as foreign products

CONCLUSIONS

1 The first blood-free urinary proteins identified originate in the liver

2 It is probable that nephritis is not a renal disease but a disturbance of the mineral metabolism causing a disintegration of the great parenchymatous organs, which allow the proteins to leak into the blood and pass through the kidneys as foreign proteins By some unknown mechanism, this process, once initiated, is likely to continue and involve the leakage of blood proteins as well

122 South Michigan Avenue

Clinical Notes, Suggestions and New Instruments

ATROPINE DIARRHEA

William Allan M D Charlotte N C

Sollmann,[1] in discussing the action of atropine, says 'Ordinary therapeutic doses relax the intestines in man and rabbits (Katsch, 1913, Hirz, 1913) In cats, they may increase peristalsis (Magnus) It is conceivable that this also occurs in man in some conditions "

REPORT OF CASE

A woman, aged 30, the wife of a physician, was referred to me after the hay-fever season She had sneezed excessively all the year, had been troubled with constipation and sour stomach for a month, and for three nights had had a dry, tickling cough Nothing abnormal was found on physical examination the sinuses were clear and the blood and urine normal She was given magnesia and 15 drops of belladonna, three times a day, and promptly developed diarrhea with cramping The magnesia was stopped without influencing the diarrhea When the belladonna was stopped, the diarrhea and cramping disappeared over night When the belladonna was resumed after a two day interval, 3 drops before meals, the diarrhea and cramping returned at once, only to disappear as promptly when the taking of belladonna was again stopped After an interval of two weeks, a single dose of 10 drops of tincture of belladonna again precipitated an attack of diarrhea with cramping

This patient apparently bears out Sollmann's supposition, as her idiosyncrasy for atropine assumed the unusual form of diarrhea with cramping

OCCUPATIONAL SKIN DISEASE FROM EXPOSURE TO ROCK SALT AND WATER

Floyd Thurber M D Hollywood Calif

The marked incidence of pyogenic infection among workers exposed to rock salt and water in the handling of wholesale ice cream has made salt infection a common term among the workers and the industrial surgeons Since these so called salt infections commonly manifest themselves as furuncles the question of liability under workmen s compensation laws prompted my investigation of a series of cases during 1926 and 1927

Three types of cases referable to combined rock salt and water exposure presented themselves In order of frequency they were (1) infected lacerations and abrasions, (2) local furuncles, and (3) chronic fissured palms Many patients did not give any history of direct injury Lesions occurred only in exposed areas The infection was superficial and essentially limited to the skin Where furuncles occurred they showed no tendency to become systemic

Causative organisms were found to be staphylococci or mixed staphylococci and streptococci No predominant streptococci were encountered Cultures were taken from various dilutions from samples of the rock salt, but the tubes remained sterile Chronicity of the wounds from chemical irritation was the only factor found directly attributable to the rock salt The source of infection therefore would seem to be either pyogenic organisms 'seeded" in the skin or extraneous dirt Individual susceptibility was a contributing factor in some cases

Treatment was directed toward prevention and cure First-aid cauterization of minor wounds with tincture of iodine was done by the worker with frequent rinsing of the hands to remove salt It was found that the regular application of suitable oil to the skin was markedly preventive Infection was controlled by incision, drainage and wet dressings Removal from exposure was often necessary to promote recovery, and occasionally a patient with individual susceptibility was transferred to a new line of employment

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[4] Bramwell B and Paton D N On a Crystalline Globulin Occurring in Human Urine Rep Lab Roy Coll Phys 4 4, 7 1902 Bayne Jones Stanhope Wilson D W and Everett H S Precipitin Reactions of Crystalline Globulin from Human Urine Bull Johns Hopkins Hosp 34 77 (July) 1923 Hektoen, Ludvig Kretschmer H L and Welker W H A Peculiar Crystalline Protein from Human Urine J A M A 83 1154 (Oct. 11) 1924 Welker W H Thomas W A and Hektoen Ludvig Urinary Proteins Crystalline Proteins of Nephritis ibid 86 1333 (May 1) 1926

[1] Sollmann Torald A Manual of Pharmacology Philadelphia, W B Saunders Company 1920 p 288

SUMMARY

1 Exposure to rock salt and water in industry is a source of skin disease

2 The source of infection in such cases is not the salt

3 Furuncles caused from such exposure differ from the usual type in that they do not tend to become systemic

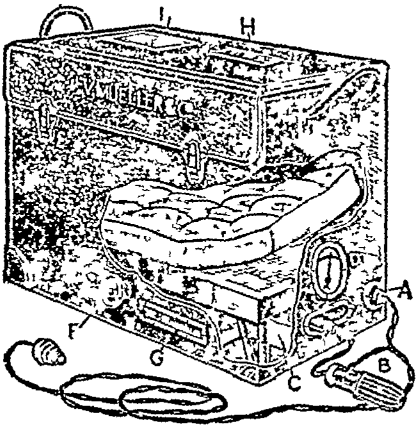
4 Preventive and curative methods are generally successful

AMBULANCE FOR TRANSPORTATION OF PREMATURE INFANTS

Julius H Hess M D Chicago

A most important epoch in the life of the premature infant is that period between birth and the institution of some proper method for the prevention of thermal shock It is the experience of all institutions receiving such infants that many of them are lost through carelessness in protecting them during the first hours after birth

The electrically heated bag here illustrated is constructed to meet conditions encountered in the home and during transportation of infants from distant points by train or automobile It is designed as a part of the obstetric department equipment for general and special hospitals or other institutions likely to be called on for the temporary care of premature infants The hand bag is of leather and steel construction, 24 inches long, 14 inches wide and 17 inches deep



External and internal construction of the infant ambulance. A disk thermometer *D* indicates the temperature within the ambulance Fresh air enters intake vent *G* and passes through the air conduit to the heating unit *C* After being warmed it circulates up through the ambulance proper and finds egress through outlet vent *H* Both air vents have adjustable shutters Temperature control is provided by a thermostat which is adjusted by turning adjusting key *F* The latter may be removed to prevent tampering by unauthorized persons A window at *I* in the top permits observation of the infant and the ambulance interior may be illuminated by a small light (not illustrated) operated from the outside by a push button A red pilot light *B*, indicates when the heating equipment is functioning

An even temperature is maintained by electric heat with thermostatic control A composite heating unit permits the use of the 110 volt light current (direct or alternating current), the 32 volt current of the Pullman car, or the 6 volt current of the automobile battery Insulated walls prevent sudden temperature change under any conditions A proper supply of warm fresh air is assured

Ventilation is secured by an adjustable shutter in the lower section of the outer wall which permits fresh air to pass beneath the heating unit A similar shutter in the top of the bag completes the circulation of the air A disk thermometer in the front of the bag is adjusted to indicate the interior temperature Observation of the infant is made possible through a large window in the top of the bag The interior can be illuminated by means of an electric light which is attached to the end of the bag

Clothing and blankets used for dressing the infant during transportation are best made from heavy woolen materials

104 South Michigan Avenue

Council on Physical Therapy

The following article has been approved by the Council on Physical Therapy of the American Medical Association
H J Holmquest Secretary

ROENTGEN-RAY DIAGNOSIS

LEOPOLD JACHES M D
NEW YORK

These pages present a sketchy outline of the aid which can be rendered by the roentgen rays in the recognition of disease The space allotted being limited, only the most salient features of roentgen-ray diagnosis can be touched on Many of the rarer but nevertheless important conditions, and even some of the more frequent ones had to be omitted An attempt, however, has been made to present the subject with sufficient completeness to enable the physician who is not thoroughly familiar with the possibilities of roentgen-ray diagnosis to obtain a fair index of the diseases in which the roentgen rays can be of aid to him

RELATIVE VALUE OF ROENTGENOGRAPHY AND FLUOROSCOPY

This is not the place to discuss technic The subject cannot be explained theoretically Only practical instruction and demonstration can give one an idea of the methods to obtain desired results It is appropriate, however, to discuss the relative value of fluoroscopy and roentgenography As a general principle it may be stated that whenever organs in motion are to be studied, fluoroscopy is the method of choice No roentgenograms, however large their number, can give the impression of the movements of the diaphragm, of the action of the heart, of the pulsation of the aorta, or of the peristaltic activity of the stomach and intestines In the latter organs even fluoroscopy, unassisted by the observer's palpatory manipulations is generally insufficient On the other hand, no recital or sketch of the fluoroscopic observations can equal the roentgenogram as a permanent record, nor can it furnish the fine detail often indispensable for a diagnosis The best results are obtained by a combination of fluoroscopy and roentgenography when chest and gastro-intestinal tract are to be examined Roentgenographic examinations are best when parts at rest are under consideration, such as bones, urinary concretions, and the nasal accessory sinuses Fluoroscopy alone may be used in the study of cardiovascular lesions, large mediastinal tumors, or fluid in the chest It is unsafe, however, to rely absolutely on negative fluoroscopic observations The fine lesions of early pulmonary tuberculosis, for instance, are invariably overlooked, because either the fluoroscopic screen cannot register them with the detail that the photographic emulsion does, or human eyes are not sufficiently sensitive to detect any but the coarser shadows It would be well for the internist or the surgeon who, following the present-day trend installs a fluoroscopic outfit in his office, to bear in mind this limitation Such warnings are especially appropriate at present when our younger men who spend a short time in the continental European roentgen-ray institutes bring back the idea that fluoroscopy is all that is necessary At several of these institutions the chiefs or their assistants admitted that they were compelled to resort to fluoroscopy because it is cheaper In estimating the relative value of these two methods one should also bear in mind that the greatest advances in roentgen-ray diagnosis made during the last twelve or fifteen years were accomplished in this country, where the fluoroscope, though unsparingly used, is generally subservient to the roentgenogram This statement is not prompted by super-patriotism Most American roentgenologists concede the superlative quality of European roentgenology Many American radiologists received all or a great part of their early training in Europe and learned that even there the roentgenogram was preferred by those who had the necessary funds available Such, for instance, was the method of Albers-Schonberg, the great pioneer roentgenologist Though he used the fluoroscope constantly and eventually lost his life as a result, he made roentgenograms of everything

Stereoscopy and the single roentgenogram each has its particular field Two plain views at right angles to each other are more valuable than a stereoscopic set made in only one direction Stereoscopic views at right angles to each other are, of course, better than plain views in two directions In the skull, pelvis, shoulders and hips, where views at right angles to each other cannot be taken, the stereoroentgenogram will give the best results

FRACTURES AND DISLOCATIONS

The first attempts to use roentgen rays for diagnosis were naturally made to study fractures Surgeons soon found the rays of inestimable value not only in the determination of the presence and nature of a fracture but also in studying the results of methods of treatment It is no exaggeration to assert that the treatment of fractures has been revolutionized by the advent of the roentgen rays One no more hears the surgeon maintain that all that is wanted is a good functional result and that perfect anatomic alinement is not necessary The skilled surgeon will not rest satisfied with "a good functional result," knowing full well that such a result is not often obtained without a good anatomic result He has learned that good function is frequently interfered with by irregularities in the alinement of the fragments, especially when near a joint So now that he has a reliable means of determining the success or failure of his efforts, he will not rest content until the reduction of the fragments has attained the best possible alinement Exceptions, of course, there are to this as to every other rule In fractures of the femur, or in fractures of both bones of the forearm or leg, perfect alinement is often unattainable except by operative intervention

While the diagnosis of fractures by the roentgen ray is comparatively simple, it must not be forgotten that some fractures are difficult of demonstration, either because of their peculiar nature and location or because they involve the junction of bone and cartilage The latter is absolutely radiotransparent As examples may be cited the fractures of ribs in the axillary region or at the costochondral junction In the axilla they are not demonstrable because, the fractures being generally of the greenstick variety, there is no displacement and the views that can be had of the ribs are such that the line of fracture is between the two fragments and is overlapped by both

Likewise, small fissures which are of great clinical importance, such as often occur in the head of the radius, may be difficult to find, unless one has roentgenograms in several different positions Or epiphyseal separation may be so slight that none but the most experienced will detect them, and then only by careful comparison with the opposite side Such comparison should be the routine in the study of fractures in the young, as the cartilaginous epiphyseal lines might be mistaken for fractures, or the converse may happen

The fact that cartilage is transparent to the rays is of great importance in the study of fractures in children and adolescents An injury to cartilage alone, not involving bone, is out of reach of roentgen-ray diagnosis Similarly, the tears in the semilunar cartilages of the knee are most often missed In such cases a negative finding does not absolutely rule out the suspected lesion

Having mentioned these exceptions, one can affirm that by means of the roentgen ray it is possible to determine the presence of a fracture and to disclose its exact location, its nature, whether single or multiple, the position of the fragments, the method of attack in the efforts at reduction, and the result of those efforts Callus in its early stages can be determined only by means of the roentgen ray

Dislocations are also readily diagnosed by the roentgen ray, and differential diagnoses between fractures, dislocations or a combination of the two are made with absolute certainty Stereoscopy will aid where the dislocation involves the shoulder joint or in the more rare luxations of the hip

Here a note of warning should be sounded Fluoroscopy should never be resorted to for the purpose of diagnosing fractures or dislocations After the diagnosis has been made by means of the roentgenogram, reduction may be controlled with the aid of the screen The result of this procedure should be checked up, however, by means of the roentgenogram In this field cooperation between roentgenologist and surgeon is of the utmost importance

ARTHRITIS

From the diagnosis of fractures and dislocations it is merely a step to the study of the various forms of arthritis The changes that occur at the articulations of the bones can be demonstrated with great precision, whether they are the calcium absorbing (atrophic) states in the early inflammatory stages or the bone-productive (hypertrophic) states of the chronic or of the healed stages of the disease The atrophic lesion is shown by the disappearance of the articular cleft, by the approximation of the contiguous bones and by a transparency of the bones which almost equals that of the soft tissues

The roentgenologist soon learned that, with the exception of tuberculosis, the roentgenogram does not present any differentiating signs between the various infectious forms of arthritis There being no characteristic bone changes, whether due to the streptococcus, gonococcus or other micro-organism, he can only state that the process is acute or chronic, that it is extensive or limited There is an exception to this rule though In the knee-joint the gonorrheal infection often attacks the cartilage on the posterior surface of the patella and the adjacent portion of the femur, causing a close approximation of these bones in the early stages and, unless the disease has been checked, ankylosis takes place in the later stages

In the early acute stages there is seen an enlargement of the soft tissues and after three weeks marked absorption of the calcium salts showing the bones involved in good sharp outline, with the corticalis of eggshell thinness, but generally as transparent as the soft tissues

The only form of arthritis that is almost characteristic in its appearance is tuberculosis in its early stages, when there is not only marked absorption of the calcium salts but also a peculiar inflammation of the soft tissues, causing a general haziness of the entire joint

Another characteristic finding in tuberculosis is caries sicca which is found most frequently in the shoulder joint in middle age where it causes distinct erosions in or near the head of the humerus

When the tuberculous process has undergone healing, the bones resume their normal consistency, but marked deformity often remains if the process has not been at least partially checked in its early stage

Syphilitic arthritis may sometimes be differentiated from the other forms by the presence of periostitis in the shafts of the bones adjacent to the joint involved

Charcot's joints and syringomyelia are generally characterized by the enormous deposits of bony detritus with marked destruction of the joint, while other neurologic diseases may show purely atrophic changes

A differential diagnostic point in Charcot's joint is the absence of pain notwithstanding the severe anatomic lesion, and no atrophy of the bone

Perthes' disease, which affects the head of the femur, flattening it, but not involving the entire joint, occurs sometimes in adolescents It is generally self-limited Its etiology is unknown

DISEASES OF THE BONES

Bone diseases can roughly be divided into three large groups (*a*) inflammatory, (*b*) neoplastic, and (*c*) constitutional

(*a*) The most frequent of the inflammatory diseases is osteomyelitis, next in frequency are syphilis, bone abscess and typhoid, least frequent is tuberculosis of the shaft

Osteomyelitis is hardly ever recognized in its early stages A septic infarct may lodge in the bone marrow and give rise to clinical symptoms, but before it has caused a perceptible macroscopic change in the bone itself the roentgenogram will not show anything at variance from the normal Consequently, it is very important to remember that early osteomyelitis cannot be ruled out on the strength of the negative roentgenogram As the disease progresses, its various stages are brilliantly revealed At first there is localized widening of the transparent central area due to erosion of the corticalis Soon the inflammatory process extends through the corticalis and causes a reaction in the periosteum, which begins to form new bone If the process is quickly arrested, there results a thickening or sclerosis of the corticalis, possibly with a cavity in the medullary canal, which sometimes contains one or more sequestra If the process extends, especially if it is a rapid one, the greater part or the whole of the shaft may become a sequestrum which is enveloped by the bone newly formed from the periosteum—the involucrum The roentgen ray, better than any other means, allows the surgeon to follow this process and gives him the indications for his procedure He can carefully watch developments and step in at the proper moment

Syphilis generally manifests itself in the form of localized, occasionally generalized, periostitis of the shaft of the bone When localized, it may present a uniform thickening of the corticalis and periosteum or a broken-up bony deposit, the so-called lacework periostitis It may occur in all the long bones but is most frequent on the anterior ridge of the tibia or on the lateral surface of the distal half of the ulna Other forms are irregular thickening with small areas of rarefaction resembling abscesses, except that the periostitis is more extensive and the rarefactions are multiple

Another form of syphilis of the bone is gumma, which causes localized rarefaction of the bone Its most frequent location is the humerus, where it is often discovered only after a fracture has occurred, but it may also occur in other bones In such cases osteogenic sarcoma is generally thought of first, but a history of the previous infection, aided sometimes by a positive Wassermann reaction (the absence of which does not rule out the presence of bone syphilis), may help to make the diagnosis and prevent amputation

Congenital syphilitic dactylitis is recognized by the cylindric mantle of periostitis that envelops the apparently normal shaft

Syphilitic osteomyelitis is fairly common and cannot be distinguished from the pyogenic type, except that clinical symptoms are less manifest

Bone abscess is seen as a small area of rarefaction in the corticalis of a long bone amid localized periostitis

Typhoid bone infection may involve the spine or the long bones It is destructive at first but later causes periosteal involvement and in the long bones may resemble abscess The history generally makes the diagnosis

Tuberculous osteomyelitis in adults is very rare There are few authentic cases on record in which tuberculosis was established beyond all doubt by the demonstration of the tubercle bacillus in the bone or marrow The few reliable cases reported show a thinning of the corticalis, general haziness of bone and medullary cavity, and no periostitis Most other cases reported as tuberculosis are, to say the least, doubtful and generally show a mixed infection

Congenital tuberculous dactylitis causes a widening of the entire phalanx with moderate irregular bone absorption and very well defined bone structures It has no periosteal thickening

(*b*) Neoplasms are either benign or malignant, primary or metastatic

Benign neoplasms are generally osteomas, exostoses, osteochondromas, enchondromas, cysts and the giant cell tumors Osteomas and exostoses can generally be recognized because their structure is that of the normal bone, from which they arise They are slow growing and are mainly found on the shafts of the long bones, but near their epiphyses Osteochondromas also generally arise from the long bones and present normal bone structure interspersed with areas of transparency—cartilage

Enchondromas, which most frequently affect the bones of the hands and feet, are situated within the bone, causing thinning and expansion of the corticalis and disappearance of most of the normal bone, which is replaced by the radiotransparent cartilage

Cysts expand the bone but slightly and cause thinning of the corticalis They are homogeneously transparent and have very few, and more often no, trabeculae They do not cause pain or enlargement of the limb and are as a rule discovered only after trauma which results in fracture

Giant cell tumors are mentioned here because they are clinically nonmalignant and to some extent resemble bone cysts except that they are multilocular and cause greater expansion of the bone and are situated at the ends of the long bones They rarely metastasize or recur

Primary malignant bone neoplasms are, to the best of our present-day knowledge, the sarcomas Carcinoma is always metastatic Sarcoma may also be metastatic

Sarcoma is generally a destructive lesion No bone is safe from its attack When periosteum is involved there will often be new but irregular bone formation along its surface Soon the soft tissues are invaded The periosteal thickening may be more or less uniform at first, eventually it becomes broken up and often presents characteristic lines radiating into the soft tissues and at right angles to the shaft The bone often expands and the corticalis is destroyed They metastasize very readily, especially into the lungs It is imperative, therefore, to make a roentgen-ray examination of the chest before any surgical procedure is undertaken

The classification of this bone neoplasm has encountered great difficulty During the last ten years, however, the work of the Sarcoma Registry has begun to bring order out of chaos It would lead too far here to review its work to date The reader is referred to two excellent monographs, one by Codman on Bone Sarcoma, published by Paul B Hoeber, New York, and the other by Anatole Kolodny in supplement 1, *Surgery, Gynecology and Obstetrics*, 1927

There are two main types of metastatic carcinoma, the bone productive and the bone destructive The former may involve the entire spine, the pelvis, the humeri and femurs, it occurs most frequently secondary to carcinoma of the prostate, but has been observed also secondary to carcinoma of the breast, thyroid, lung, pharynx, skin and other organs

The bone destructive type may involve all bones, including the skull It is most frequent in carcinoma of the breast, thyroid, uterus and hypernephroma, but occurs also after other primary lesions The involvement may be single or multiple, the former most frequently affects the trochanteric region of the femur, the latter may affect every bone in the body It is a peculiar phenomenon that the greater the involvement the less malignant the course, except in hypernephroma and myeloma There is even at least one case on record in which after all the bones of the body were riddled by the process, radiotherapy caused a recalcification of all the lesions

One characteristic of all bone tumors is well worth remembering they do not cross a joint

(*c*) Constitutional or nutritional bone diseases are scurvy, rickets, osteitis deformans (Paget's disease) and osteitis fibrosa (Recklinghausen), which are fairly frequent The rarer lesions are achondroplasia, osteogenesis imperfecta and osteomalacia In scurvy the long bones, especially the femur and the tibia, are involved Periostitis occurs and the epiphysial ends of the shafts are broadened out and irregular (fringy) As the disease progresses the subperiosteal hemorrhages organize, are even calcified, and cast dense shadows which are the most diagnostic marks of the disease

Rickets presents a similar appearance, except for the absence of the periosteal lesion In the more advanced or healed stages, the bones show marked bowing The rickety rosary is often easily recognized by a spade-like expansion of the sternal ends of the ribs

Paget's disease occurs most frequently in middle or advanced age It may involve only one bone, generally the tibia, but most often it affects the skull at a very early stage and then invades the lower spine, the pelvis, the femurs and other bones In all the bones except the skull it is characterized by a mixture of rarefaction and sclerosis, which resembles normal bone seen through a magnifying glass slightly out of focus In the skull there is thickening of the vertex with numerous larger and smaller circular patches of undifferentiated calcium deposits The base of the skull is never involved

Osteitis fibrosa attacks the young as well as the old and is similar in appearance to Paget's disease, but affects only the long bones There is more rarefaction which results in a bending of the bones It rarely invades the skull

Achondroplasia shows shortening and broadening of the long bones

Osteogenesis imperfecta, which occurs in young children, is characterized by atrophy and thinning of the shafts without shortening, frequently accompanied by fractures The vertebrae flatten and height is reduced

In osteomalacia, which is most frequent in women, there is irregular rarefaction and, because of the softening, extreme deformity

A lesion of unknown origin which generally affects the young is a marked absorption of the patella or of the tarsal scaphoid which heals spontaneously It was first described by Kohler Another lesion, also bearing his name, is partial destruction of the head of the second metatarsal bone and, to a lesser extent, of the base of the contiguous phalanx

THE SPINAL COLUMN

The spine is subject to practically the same lesions as occur in other bones and joints The most frequent lesion is tuberculosis (Pott's disease), which mainly affects the lower thoracic and lumbar areas, less so the cervical region In this disease, which first attacks the intervertebral disks and soon invades the bodies, which become softened and decalcified and then collapse, there results very marked deformity—kyphosis This is, especially in advanced stages, accompanied by a cold abscess, which is shown as a dense elliptic shadow hugging both sides of the spine

In contradistinction to this is metastatic carcinoma of the spine Even in the osteoclastic variety the intervertebral spaces remain clear, and the bodies, though decalcified, retain their shape and size, the tough carcinomatous tissue preventing their collapse until an advanced stage is reached

Syphilis of the spine is infrequent Its manifestation is generally a slight destruction of the vertebrae and increased density of the parts remaining intact The diagnosis is generally made by the history, the positive Wassermann reaction and the result of antisyphilitic treatment

Sarcoma of the spine, as a rule, causes marked destruction of the bodies affected and is followed by early metastases in the ribs, clavicles, and other parts of the spine

Osteomyelitis is rare Typhoid will occasionally affect vertebrae, in which it causes localized rarefactions The history will help make the diagnosis

In arthritis (spondylitis) the borders of the vertebrae show osteophytes, which may reach enormous extent and cause complete coalescence between them

Trauma may result in fracture of the articular processes with dislocation, crushing of one or more vertebrae, or fracture of the transverse processes in the lumbar region

The pelvis may be the site of any of the lesions affecting other flat bones or the vertebrae

Tumors of the spinal cord and its meninges are not demonstrable by the roentgen ray except when they erode a contiguous vertebra The introduction of iodized oil, however, helps greatly to localize these tumors and sometimes to determine their extent The injection is made through the cisterna, the patient in the upright position, and roentgenograms are made shortly afterward If a tumor is present it will generally block the canal, and the iodized oil will stay there for days, if not forever If no tumor is present, the iodized oil quickly descends to the upper part of the sacrum where it is recognized as a small, dense, inverted triangle

THE SKULL AND BRAIN

The skull is treated separately because the bony texture, which is peculiarly its own, makes the various inflammatory, constitutional or neoplastic conditions assume entirely different forms from those of the long bones It is less often affected by the more common diseases of the long bones, while in some of the rarer diseases, such as Paget's, it is more frequently and more extensively involved than the other bones Another reason for a separate consideration of the skull is that it is subject to lesions which occur as a secondary manifestation resulting from diseases involving the brain, its cavities or its meninges

Osteomyelitis of the skull is not as frequent as that of the long bones There is less periosteal reaction, and there are irregular small areas of rarefaction alternating with those of more or less normal bone

Syphilis may appear as a gumma causing a greater or smaller defect in the skull, or a marked localized thickening, or as scattered areas of thickening and rarefaction

Carcinoma, hypernephroma, myeloma and other malignant tumors may metastasize in the skull, producing more or less numerous, small areas of bone destruction which are circular and clear cut as though they had been punched out by an instrument Less frequent tumors are chloroma, neuroblastoma and the benign cholesteatoma Chloroma is apt to be general but the skull metastases may be the first symptoms Osteomas, however, are found quite frequently

Erosions of the skull are often seen as the result of localized pressure due to a neoplasm of the brain or its meninges Brain tumors are not demonstrable directly by the roentgen ray unless they are completely or partly calcified, indirectly they are demonstrated by causing localized areas of pressure on the bone, still less indirectly by generalized intracranial pressure Generalized intracranial pressure is shown by erosion or complete disappearance of the sella turcica, diastasis of the sutures and thinning of the cranial bones, in which digital depressions are seen that closely fit the convolutions of the brain

Tumors of the hypophysis cause enlargement of the sella turcica, thinning of its clinoid processes and sometimes depression or perforation of the floor into the sphenoid sinus Acromegaly is associated with enlargement of the facial bones and soft tissues, with prognathism and an enormous enlargement of the nasal sinuses The bones and soft tissues of the hands and feet are also enlarged

In recent years Dandy and his followers have been able accurately to localize intracranial tumors and other lesions by introducing air into the ventricles through a trephine opening and studying their abnormalities Independently of him some German investigators have obtained similar results by injecting air by the endolumbar method

Fractures of the skull are seen as linear, branching or stellate transparencies Great care must be observed not to mistake blood vessel grooves or sutures for them Depressed fractures can be diagnosed only by means of stereoscopic roentgenograms

Disease of the nasal accessory sinuses generally causes a decrease in their transparency, often obliterating all detail in them Care must be exercised when diagnosing disease of the frontal sinuses by mere lack of density, they are often very small and therefore less transparent, and not infrequently are entirely absent Lateral views should always be made to determine their presence or size

Disease of the mastoids is shown by general haziness in the early stages and by destruction of the septums in the later stages Both sides should be examined for comparison

Roentgen-ray examination of the teeth will show the presence of unerupted ones and their position, cortical abscesses by rarefaction at the root, pericementitis and pyorrhea by the lesser or greater transparent areas skirting the teeth and their roots But one should guard against the overlapping maxillary sinuses which may simulate a transparency at a dental root

Dentigerous cysts are shown as areas of transparency containing a tooth

Other lesions of the jaw are similar to those of other bones and need not be dwelt on here

(To be continued)

Council on Pharmacy and Chemistry

NEW AND NONOFFICIAL REMEDIES

The following additional articles have been accepted as conforming to the rules of the Council on Pharmacy and Chemistry of the American Medical Association for admission to New and Nonofficial Remedies A copy of the rules on which the Council bases its action will be sent on application

W A Puckner Secretary

POSTERIOR PITUITARY DESICCATED-LEDERLE—The posterior lobe of the pituitary gland of cattle, extracted with acetone, dried and powdered

Actions and Uses—See Pituitary Gland, New and Nonofficial Remedies, 1927, p 285

Dosage—From 0 006 to 0 03 Gm (⅒ to ½ grain) daily

Manufactured by the Lederle Antitoxin Laboratories New York No U S patent or trademark

Tablets Posterior Pituitary Desiccated Lederle ⅒ grain

Posterior pituitary desiccated Lederle is prepared according to the method given for standard powdered pituitary under Solution of Pituitary U S P X

WHOLE PITUITARY DESICCATED-LEDERLE—The pituitary gland of cattle, including the infundibulum and the anterior and posterior lobes dried and powdered, without the addition of preservative or diluent

Actions and Uses—See Pituitary Gland, New and Nonofficial Remedies 1927, p 285

Dosage—From 0 06 to 0 2 Gm (1 to 3 grains) three times a day

Manufactured by the Lederle Antitoxin Laboratories New York No U S patent or trademark

Tablets Whole Pituitary Desiccated Lederle 1 grain

Tablets Whole Pituitary Desiccated Lederle 3 grains

The fresh glands are freed of extraneous matter finely ground spread on glass plates and dried rapidly in a current of warm air Whole pituitary desiccated Lederle is a grayish powder with slight characteristic odor One part represents approximately *5 parts of fresh substance*

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SATURDAY FEBRUARY 18, 1928

PROGRESS IN THE STUDY OF MEASLES

In 1924 a brief editorial survey of progress in the search for the cause of measles [1] indicated that little real advance had been made since the classic experiments of Hektoen [2] in 1905 In his experiments, typical measles had been produced in two persons by injections of small amounts of blood drawn from measles patients on the first day of the rash and incubated twenty-four hours in ascites broth It had previously been shown that the disease could be produced experimentally by inoculations of fresh nasal mucus and scrapings of the skin containing blood and epithelial debris from measles patients early in the eruptive stage [3]

Much has been added in the last three years to the already voluminous literature on the problem of the cause of measles Tunnicliff and her co-workers have brought forward new facts about the green producing diplococcus which she isolated from the nose, throat and eye secretions and blood of early measles patients A skin test for susceptibility to measles [4] was described in which a whole, killed, anaerobic dextrose broth culture of the Tunnicliff organism was used as antigen In all persons tested who had a negative history for measles the reaction was positive The tests were negative in 96 per cent of those with a history of the disease The antigen was neutralized by convalescent measles serum and by the serum of goats immunized to the measles diplococcus

Ferry [5] described a green forming streptococcus isolated from the blood of measles patients early in the eruptive period It differed from Tunnicliff's diplococcus chiefly in that it produced an exotoxin Filtrates of broth cultures produced positive skin tests in about 40 per cent of persons with no history of measles Later Tunnicliff and Taylor [6] published the results of skin tests made with the filtrate from cultures of the Tunnicliff organism in 0 2 per cent dextrose broth containing 1 per cent of sheep's blood Positive reactions were obtained in 50 per cent of persons with no history of measles and none in those who said they had had the disease In explanation of Tunnicliff's previous reported failure to produce positive skin tests with filtrates of her diplococcus, they offered the fact that ascites fluid from adults who had probably had measles had been added to the mediums in which the cultures were grown

Cary and Day [7] reported gram-positive, green producing diplococci in 98 per cent of throat cultures, about 50 per cent of cultures from conjunctival secretions, and 33 per cent of blood cultures in early measles cases They produced rashes and febrile reactions with seven strains in rabbits

The finding of green forming cocci in the blood of early measles patients by these and other workers is probably of more significance than the discovery of them in the nose and throat Experienced laboratory workers are familiar with the fact that bile insoluble green cocci are practically constant in throat cultures of normal persons and by no means uncommon in nasal cultures Many well qualified investigators have failed to obtain positive blood cultures in early measles cases However, there is no reason to doubt the results of the authors mentioned Of the etiologic significance of the organisms found there is more question

In their early studies on scarlet fever the Dicks [8] made both aerobic and anaerobic cultures of the blood in twenty-four early cases of scarlet fever Positive results were obtained in twenty of these but no single organism was constantly found Often similar strains were found in the throat, blood and urine of these patients The Dicks concluded that in the acute stage of scarlatinal angina organisms from the throat regardless of their identity, often enter the blood stream in considerable numbers The green coccus reported in the blood of early measles patients has not been found with great constancy It may well be an accidental invader of the blood stream during the catarrhal stage of measles While the finding is of much interest, evidence offered for its etiologic relationship to measles is not altogether convincing

As numerous observers have pointed out,[9] the susceptibility of rabbits to the same virus that produces measles in man has by no means been proved There are some objections also to the acceptance of the mild reactions produced in monkeys by the injection of measles material as characteristic of measles The only rashes and Koplik spots reported to have been produced with the green cocci have been in these animals and guinea-pigs Successful experimental production of measles in man would be much more satisfactory evidence for the etiologic role of these organisms

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[1] The Etiology of Measles—A Retrospect editorial J A M A **83** 688 (Aug 30) 1924

[2] Hektoen Ludvig Experimental Measles J Infect Dis **2** 238 1905

[3] Mayr F Beobachtungen uber Masern Ztschr d k k Gesellsch d Aerzte zu Wien **1** 6 1852 cited by Hektoen Ludvig Experimental Measles A Review J A M A **72** 177 (Jan 18) 1919

[4] Tunnicliff Ruth Further Studies on Diplococcus in Measles J Infect Dis **37** 193 (Sept) 1925

[5] Ferry N S and Fisher L. W Measles Toxin J A M A **86** 932 (March 27) 1926

[6] Tunnicliff Ruth and Taylor Ruth E Skin Tests in Measles J A M. A **87** 846 (Sept 11) 1926

[7] Cary W E and Day L A The Etiology of Measles J A M A **89** 1206 (Oct 8) 1927

[8] Dick G F and Henry G R Anaerobic Cultures in Scarlet Fever J Infect Dis **15** 85 1914

[9] Hektoen (footnote 3) Sellards A W A Review of the Investigations Concerning the Etiology of Measles Medicine **3** 99 (May) 19[illegible] McCartney, J E Recent Work on Measles, Lancet **1** 93 (Jan 8) 1927

The favorable reports of Tunnicliff and her co-workers in protecting persons exposed to measles by injections of serum[10] of goats immunized to her diplococcus are promising Reports of results of other workers using the Tunnicliff serum will no doubt soon be forthcoming, and will be awaited with interest

Caronia[11] has reported the cultivation of a gram-negative anaerobic coccus from the blood, bone marrow, spinal fluid and nasopharyngeal secretions of patients with early eruptive measles He also found immune bodies specific for this organism in the blood serum of convalescent cases So far, Caronia's observations lack confirmation McCartney[9] followed the Italian worker's directions minutely but was unable to duplicate his results Artefacts were found in the sterile, uninoculated culture medium closely resembling the organism of Caronia

The recent investigations of Degkwitz,[12] while not demonstrating the causative agent, are of some promise This worker successfully repeated Hektoen's human inoculation experiment, and then attempted to discover whether the virus could be cultivated Virus was obtained by bleeding a child on the first day of the eruption in a typical case of measles, and diluted with a special salt solution containing the same number of anions and cations as the blood, and of the same p_H One cubic centimeter of a 1 5,000 dilution failed to produce measles in a child known to have never had measles From this dilution subcultures were made over a period of seventy-eight days, during which time the subcultures had gone through fifteen generations and a dilution of one in three trillions of the original virus had been reached The cultures were made in symbiosis with green cocci, sometimes the Tunnicliff organism and sometimes pneumococci One cubic centimeter amounts of the final subculture, after filtration through a Berkefeld W filter, were injected into various persons and produced reactions consisting of a rise in temperature, conjunctivitis, bronchitis and rhinitis from ten to fourteen days after inoculation Sometimes bluish red macules appeared on the skin, but never a typical measles eruption Control injections of the symbiotic organisms carried through in the same way alone did not produce any recognized reaction Two months later, inoculation of both groups with infectious measles blood was followed by the appearance of typical measles in those persons who had previously received only the filtrate of the symbiotic organisms Those previously inoculated with subcultures of the virus did not contract the disease

In his experiments on monkeys, Degkwitz was not able to produce a rash which he regarded as typical of measles, but he showed that the serum of those monkeys developing a rise in temperature after receiving doses of virus had definite value in protecting persons against doses of virus of proved infectivity Degkwitz has advocated the use of a protective measles antiserum, made presumably by inoculating animals with repeated doses of his virus Reports of its use have not been uniformly favorable

If the human inoculation experiments of Degkwitz are repeated and confirmed one new fact, the ability of measles virus to grow outside the body, will have been added to the knowledge of the cause of measles The finding of green producing cocci in the blood of early measles patients by Tunnicliff, Ferry Cary and Day and others is interesting and important Final judgment on the role of these organisms in the causation of measles must be withheld until unquestioned measles has been produced by them in man or in experimental animals

PREVENTION OF COLDS BY ULTRA-VIOLET RADIATION

In 1926, D F Smiley suggested the possibility of relating the winter and spring incidence of colds to two factors other than atmospheric temperature One of these was the seasonal deficiency in vitamin intake, the other, a disordered vitamin metabolism in the body brought on by lack of solar radiation Later, Maughan and Smiley[1] performed experiments to determine the effect of ultraviolet radiation in preventing colds The idea, as they stated, was not original with them Several investigators in Europe and America had given attention to similar problems Of these, Barenberg Friedman and Green[2] did not obtain desirable results Their infant subjects improved in general health during the first month of treatment but contracted an increased number of colds during the second, third and fourth months The dosage of ultraviolet radiation to which the children were subjected was worked up to thirty minutes on alternate days Barenberg and his co-workers commented in the following words "There can be no question that the children received a sufficient degree of irradiation It is our belief that at the present time ultraviolet irradiation is given in an excess rather than in too small degree"

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[10] Tunnicliff Ruth and Hoyne A L Prevention of Measles by Immune Goat Serum J A M A **87** 2139 (Dec 25) 1926 Hoyne A L and Gasul B J Measles Prophylaxis Report on the Use of Immune Goat Serum ibid **87** 1185 (Oct 9) 1926

[11] Caronia G Etiology of Measles Pediatria **31** 801 (Aug 1) 1923

[12] Degkwitz R The Etiology of Measles J Infect Dis **41** 304 (Oct) 1927

[1] Maughan G H and Smiley D F The Effect of General Irradiation with Ultraviolet Light upon the Frequency of Colds J Prev Med **2** 69 (Jan) 1928

[2] Barenberg L H Friedman Irving and Green David The Effect of Ultraviolet Irradiation on the Health of a Group of Infants J A M A **87** 1114 (Oct 2) 1926

Accordingly, Maughan and Smiley, in their work, attempted to administer a quantity of ultraviolet radiation equivalent to that to which the ordinary city dweller is exposed during the summer They employed five groups of persons Group 1 was made up of adults who considered themselves very susceptible to colds, having usually four or more a year This group was irradiated from Nov 3, 1926, to Jan 28, 1927 The control was group 2, composed of persons of similar age and susceptibility, who were observed over the same period as those irradiated Members of group 3 were adults who considered themselves subject to four or more colds a year They were irradiated from Nov 3, 1926, to March 19, 1927 The control in this case consisted in the number of colds which the subjects recalled that they had suffered during the winter of the previous year Group 4 was composed of adults who considered themselves especially susceptible to colds They were irradiated from Dec 1, 1926, to March 26, 1927 The control for this group was similar to that of group 3 Group 5 consisted of susceptible children They received irradiation from Nov 18, 1926, to March 19, 1927 The control was the number of colds remembered by the mothers during the previous year Obviously, these controls are not ideal The authors have corrected for errors as far as possible, however, and they summarize as follows 'A ten-minute irradiation of the naked body with the ordinary mercury vapor lamp at a distance of 30 inches once a week throughout the dark period of the year resulted, among four groups of persons (fifty-eight persons), in a reduction in the frequency of colds of from 27 9 to 40 3 per cent"

In this issue, Barenberg and Lewis[3] report further investigation, part of which was concerned with the same problem of irradiation and respiratory infection which before occupied them In the latter series, however, they replaced their mercury vapor lamp with one of the carbon arc variety The change was made in an attempt to approach the character of the solar spectrum as a whole, in which, according to A F Hess, there may be some virtue Again the dosage was thirty minutes on alternate days, but in this series the authors are not fearful that their subjects suffered from overirradiation Results, nevertheless, were no better than before

Thus far, apparently, the family physician charged with keeping his patients well is in a dilemma On the one hand are well controlled experiments with negative results in which the dosage was large On the other hand are imperfectly controlled experiments and success which the investigators attribute to low dosage Positive statements, faith and investments may well await further evidence

Current Comment

THE SCHIRESON CASE

On February 4 THE JOURNAL published an editorial on Henry Junius Schireson, self-styled "plastic surgeon" recounting his professional history, based on collected material The occasion for the editorial was the pitiful story of a young woman who lost both her legs as the result of gangrene following an operation for which she is said to have employed Schireson The operation was done presumably to "straighten" her legs In this issue (p 528) will be found a report by the two reputable physicians who saved the young woman's life by amputating her gangrenous legs The roentgen-ray picture indicates how little straightening was necessary or actually done In the previous editorial it was brought out that in 1911 the licensing officials of the state of Illinois, after a thorough examination of his credentials, unanimously rejected Schireson's application for a license It was brought out also that, subsequent to 1911, Schireson was engaged in various quackish and illegal practices, and in at least two instances was convicted and "served time" Attention was called further to the fact that in 1921 or 1922, during the incumbency of a notorious official who was later convicted of the fraudulent sale of medical licenses, Schireson was granted an Illinois license, which the present officials have not seen fit to revoke During the past few days Chicago newspapers have reported that an "official investigation" has been made of the "leg-straightening" episode and the astounding decision reached that nothing further can be done until the victim, or some relative, signs a complaint! How much longer will Illinois tolerate Henry Junius Schireson?

THE ACIDITY OF THE GASTRIC CONTENTS

The evidence secured in experimental ways indicates that the acidity of uncontaminated gastric juice tends to be remarkably constant and decidedly greater than customary analyses of gastric contents as they are secured for diagnostic purposes would lead one to expect Certainly the concentration of acid exceeds the 0 2 per cent of hydrochloric acid that is usually quoted as typical of the gastric material Pure gastric juice attains at least twice that concentration When lower figures are recorded, they are not necessarily due to an impaired or perverted secretory function but rather to a neutralizing effect of extraneous substances The potency of food in this respect has long been appreciated, but reduction in acidity may be noted even in the absence of food Two factors deserve especial emphasis One is the mucus that may be discharged into the stomach and reduce the hydrogen ion concentration of the contents[1] The other neutralizing factor is the duodenal contents, the importance of which has been stressed anew by Olch and Elman[2] of the Washington University Medical School of St Louis

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[3] Barenberg L H and Lewis J M The Effect of Carbon Arc Irradiation on the Health of a Group of Infant this issue page 504

[1] Hollander F The Mechanism of Gastric Secretion Preliminary Report on a Technic for Collecting Gastric Juice of Constant and Reproducible pH J Biol Chem. **74** 23 (July) 1927

[2] Olch I Y and Elman R Regurgitation of *Duodenal Contents* as Factor in Neutralization of Gastric Acidity Proc. Soc Exper Biol. & Med **25** 184 (Dec) 1927

Regurgitation of this alkaline fluid into the stomach undoubtedly plays a significant part in regulating the reaction in the upper reaches of the small intestine The most effective contributor is the strongly alkaline pancreatic juice, the bile and intestinal juices probably assuming minor roles at best As the St Louis investigators summarize the phenomena, acid gastric juice, especially at the concentration at which it is secreted, will not be tolerated by the sensitive duodenal mucosa Instead, large amounts of alkaline pancreatic juice are secreted and this fluid pours back into the stomach to decrease the gastric acidity to the point at which the duodenum will accept it The reaction of the gastric contents, then, at any given time in the course of digestion is the resultant of secretion and neutralization by regurgitation The prepylorus, pylorus and duodenum, Olch and Elman conclude, may well be regarded as a single organ, a mixing chamber where the acid material is prepared for the intestine, and it is in this region that most of the gastroduodenal lesions occur

REFRACTORINESS TO INSULIN

There is a popular saying that "the exception proves the rule" However much the scientific logic of this adage which often serves to satisfy our ignorance, may be debated it should be admitted that an accumulation of concordant exceptions sometimes leads to the establishment of new rules to include them In medicine a rare, seemingly anomalous condition is sometimes dismissed into the category of the "exceptional" Then, when attention is drawn thereto, the number of similar cases may begin to multiply after they had previously escaped recognition or been disregarded because they seemed to be aberrant Differential diagnosis depends in a sense on the discovery of the exceptional For this reason it may be worth while to refer to a gradually increasing number of records of diabetic patients who seem to be resistant to the expected remedial action of insulin Most of them are described in the European journals A recent unusually refractory case has been reviewed by Glassberg, Somogyi and Taussig[1] of St Louis For some months the patient proved relatively refractory to insulin, responded only to enormous doses, and slipped into coma or precoma as soon as these doses were reduced During this period the patient did not respond better to fractional doses of insulin than to an equivalent single dose, on the whole, the latter was more effective than the former In ordinary diabetes, the reverse is true Special tests showed that the refractory condition was not due to an inhibitory substance—an anti-insulin—in the blood The observers are inclined to believe that the peculiar reactions shown by their patient can best be explained by assuming that the diabetes was not due exclusively to pancreatic insufficiency but to the lack of some substance other than insulin and equally necessary for the metabolism of carbohydrates It would be easy to spin hypotheses regarding the possible lack of essential muscle enzymes or other tissue components Little is gained by such multiplication of uncertainties What is needed now is more facts regarding comparable instances that current views and information will not adequately explain

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[1] Glassberg, B Y Somogyi Michael and Taussig A E Diabetes Mellitus Report of a Case Refractory to Insulin Arch Int Med **40** 676 (Nov) 1927 The earlier cases are reviewed in this paper

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Association News

THE MINNEAPOLIS SESSION

Railroad Rates to Minneapolis

The passenger associations throughout the United States have authorized a rate of one and one-half fares for the benefit of members of the American Medical Association and dependent members of their families who will attend the annual session at Minneapolis To have the benefit of a return rate of one-half fare, it will be necessary for each member to secure a certificate from the railroad ticket agent when he purchases his ticket to Minneapolis The certificate must be certified to by the Secretary of the American Medical Association, which may be done at the Registration Bureau to be located in the Auditorium in Minneapolis, and must then be validated by a representative of the railroads, who will be on duty June 11 to 19 When the certificate is so certified and validated, it will entitle its holder to purchase a return ticket to his home, over the same route traveled to Minneapolis, at one-half fare If the ticket agent at the member s home station does not have the certificate, he will furnish information as to where it may be obtained

The certificate is *not* a receipt for money paid for a ticket nor will a receipt entitle its holder to secure a return trip ticket at a reduced rate Be sure to ask the ticket agent for a CERTIFICATE

The dates of sale of tickets to Minneapolis will be June 7 to 13 inclusive, in the territories of the Central Passenger Association, the Southeastern Passenger Association and the Trunk Line Association In the territory of the New England Passenger Association the dates of sale of tickets to Minneapolis will be June 6 to 12 In the territories of the Southwestern Passenger Association the Western Passenger Association and the Transcontinental Passenger Association, the dates of sale of tickets from Arkansas, Illinois, Iowa, Kansas Louisiana, Minnesota Missouri, Nebraska northern Michigan North and South Dakota and Wisconsin, from Manitoba, Canada, and from Julesberg, Colo will be June 7 to 13, from Colorado (except Julesberg) Montana, New Mexico Oklahoma, Texas and Wyoming, June 6 to 12 from Utah, June 5 to 11, and from Arizona British Columbia, California, Idaho, Nevada, Oregon and Washington, June 4 to 9

Certificates properly certified and validated will be honored for purchasing tickets for the return journey at one-half fare up to and including June 19, but will not be honored after that date No refund of fare will be made on account of failure to present validated certificate when purchasing return ticket The return ticket must be used over the same route as that traveled going to Minneapolis Return tickets issued at the reduced rate will not be good on any limited train on which such reduced fare transportation is not honored

When you purchase your ticket to Minneapolis secure from the railroad ticket agent a CERTIFICATE, which, when properly certified to and validated, will entitle you to purchase a return ticket to your home over the same route traveled to Minneapolis, at one-half the fare paid for your ticket to Minneapolis Certificates will be honored showing the purchase of going tickets to Minneapolis or St Paul

Summer excursion rates will also be in effect at the time of the annual session of the American Medical Association in June Information with respect to these rates may be secured from the local ticket agents

BE SURE TO ASK YOUR RAILROAD TICKET AGENT FOR A CERTIFICATE WHEN PURCHASING YOUR TICKET TO MINNEAPOLIS

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest such as relate to society activities new hospitals education public health etc)

CALIFORNIA

Health at San Diego—Telegraphic reports to the U S Department of Commerce for the week ending February 4, from sixty-seven cities with a total population of about 29 million indicate that the highest mortality rate (21 4) was for San Diego and that the mortality rate for the group of cities as a whole was 13 6 The mortality rate for San Diego for the corresponding week last year was 19, and for the group of cities, 14

The d'Herelle Lectures—The date for the Lane medical lectures to be given at Stanford University School of Medicine, San Francisco, by Dr F d'Herelle of Alexandria, Egypt, has been announced as the week beginning October 22, and his subjects as (1) bacteriophagy, (2) bacterial mutations (3) nature of the bacteriophage, (4) infectious diseases, (5) the phenomenon of recovery, and (6) a general lecture on logic in biologic researches

Poliomyelitis Makes High Record—There has never been so disastrous a poliomyelitis year throughout the country, the state department of public health states, as last year California was one of the first states to suffer, and from there the disease seemed to travel through the Southwestern states to the Middle West and Eastern states, then back over the northern part of the United States to the Pacific Northwest The extent of the outbreak in California is evident in figures given for the number of cases for the last five years 1 274 in 1927, 187 in 1926, 821 in 1925, 192 in 1924, and 251 in 1923

Society News—The Los Angeles Surgical Society held a symposium, February 10, on surgical handicaps due to delay, Drs Sidney R Burnap speaking on "Traumatisms and Infections", Charles S James on "Malignancies", Adolph A Kutzmann on "Importance of Urologic Study", Dudley Fulton on "Surgery from the Internist s Viewpoint" and Avrum H Zeiler on "Surgery in Retrospect"——Dr William J Kerr professor of medicine, University of California Medical School, San Francisco, addressed the San Diego County Medical Society, February 14, on "Classification of Heart Disease with Some Comment on Treatment"

First Crookes Tube Used on Pacific Coast—The University of California has the Crookes tube with which the first demonstration of roentgen ray on the Pacific Coast was made about thirty years ago It was used to locate a bullet in the hand of a boy It required hours to obtain the picture Some of the earliest work after Roentgen's discovery was done at the University of California Mechanician William R Stamper, who aided in the construction of much of the early apparatus, is still on duty at the university The old tube was located, February 7, while the contents of a little used section of the store room in the physics department were being checked

COLORADO

Society News—The Denver County Medical Society was addressed, January 17, by Drs Russell M Wilder and Harold E Robertson of Rochester, Minn Dr Wilder addressed the faculty of the University of Colorado the previous day on "Trends in Treatment of Diabetes Mellitus"——Dr Harry T Sims, Littleton addressed the El Paso County Medical Society, January 11, on "Physiology of the Gallbladder with a Demonstration of Its Contractility"

Personal—Dr Edward Jackson, Denver, has been invited to be the guest of honor at the St Louis meeting in October, 1928, of the American Academy of Ophthalmology and Otolaryngology, Dr William H Crisp Denver, has succeeded Dr Jackson as editor of the *American Journal of Ophthalmology*——Dr Maurice H Rees has been appointed acting professional director of the Colorado General Hospital, Denver, to succeed Dr Edgar A Bocock, resigned

Course in Neuropsychiatry—The staff of the Colorado Psychopathic Hospital and outpatient department of the University of Colorado School of Medicine will give a graduate course in neuropsychiatry during the month of July There will be a fee of $100 and a certificate will be given from the medical school on satisfactory completion of the course, only doctors of medicine are eligible Inquiries should be addressed to the director of the Colorado Psychopathic Hospital, 4200 East Ninth Avenue, Denver

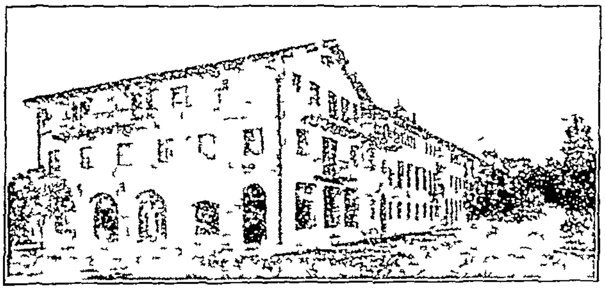
DISTRICT OF COLUMBIA

Society News—The American Laryngological, Rhinological and Otological Society will meet at the Raleigh Hotel, Washington, May 3-5, following the meeting of the Congress of American Physicians and Surgeons——George Washington University has received the Isabella King endowment of $30,000 to establish fellowships for research in biology which will be available in 1928-1929

Personal—Surg Gen Hugh S Cumming, U S Public Health Service, addressed the First District Dental Society of the State of New York at the New York Academy of Medicine, recently, on "The Place of Dentistry in Public Health Service"——Dr Herman E Kittredge has been appointed dermatologist to the Providence Hospital——Charles G Abbot D Sc, is the new secretary of the Smithsonian Institution and the fifth since it was chartered eighty-two years ago

FLORIDA

Medical Arts Building at St Petersburg—A $300 000 office building for physicians and dentists has been opened at St Petersburg It is of Spanish architecture, steel, stucco, concrete and tile construction, and is removed from the main streets of the city far enough to insure quiet and still be convenient to transportation Several members of the staff of Faith Hospital are interested in the building, the president is Dr LeRoy A Wylie The offices, none of which have an entrance to the main reception room may be combined readily There is a drug store which does not display "patent medicines," a restaurant and room for professional meetings, a clinical and roentgen-ray laboratory, continuous telephone service, and abundant parking space On the third floor are apartments Although the building probably is ahead of the requirements of the city at present, consideration was given to the number of persons who come to this community in winter This is said to be the first building of its kind in Florida



ILLINOIS

Hospital News—The new Condell Memorial Hospital Libertyville, is nearing completion and the local women's club has pledged itself to raise $2,500 to furnish the maternity wing Mrs Samuel Insull has agreed to furnish the surgical ward and operating room

Personal—Dr Susan Rachel M Cooper, for many years a practitioner at Aurora, Neb, has been appointed medical adviser to the students of the state normal school at Normal——Dr Daniel F Paul has been elected president of the staff of St Anthony's Hospital, Rock Island, for the ensuing year——Most of the citizens of La Moille contributed to a purse which was presented to Dr Joseph L Remsburg on his eightieth birthday Dr Remsburg spent the day with his sister in Princeton, and on returning to La Moille was guest of honor at a surprise party——The home of Dr Charles L Jones, Noble, was destroyed by fire, February 3

Chicago

Northwestern Sells Old Medical School—Northwestern University has sold its former medical school property at Twenty-Fourth and Dearborn streets to Wesley Memorial Hospital which it adjoins The old school building will be torn down Wesley Hospital now owns the entire block between State, Dearborn, Twenty-Fourth and Twenty-Fifth streets While no immediate building project is contemplated it is understood that the hospital will remain on the south side

Dr Hopkins Honored—A complimentary dinner was given at Rochester, Minn, February 1, in honor of Dr Clarence W Hopkins, chief surgeon of the Chicago Northwestern Railway who has been associated with that corporation for twenty-five years Following the dinner, which was attended by members of the Chicago Northwestern Railway Association and others, a presentation was made to Dr Hopkins by Dr Charles H Mayo at a general staff meeting The president of the Chicago Northwestern Railway, Mr Fred Sargent, was present

Visiting Nurse Association—At the annual meeting of the Visiting Nurse Association of Chicago, January 17 Mrs Joseph M Cudahy was elected president for the tenth consecutive time It is reported that during the year, the 118 nurses on the staff of the association made 288 000 calls on 41,000 patients further assistance was rendered poor families by giving 5,937 garments provided by the Visiting Nurse Garment Association During the year the association received from the estate of the late James Deering an endowment of $500,000, the late Mrs A Montgomery Ward bequeathed $30 000 for the work of the association, and Mrs Charles G Schweppe contributed the same amount in memory of her father

Society News—Members of the staff of the Michael Reese Hospital will conduct a clinical program before the Chicago Pediatric Society, February 21, in the Sarah Morris Building ——Dr Luther M Boyers, Berkeley, Calif, will address the Chicago Medical Society, February 22 on "Chronic Human Amebiasis', the program February 15, was on neonatal morbidity and mortality, by Drs Clifford G Grulee William C Danforth and Joseph Brennemann ——Dr Harry L Parker, Rochester, Minn, addressed the Chicago Neurological Society at the Drake Hotel, February 16, on 'Trigeminal Neuralgic Pains Associated with Multiple Sclerosis," and Dr Hans H F Reese, Madison, Wis, on 'Myelographic Studies of the Spinal Canal" (thesis) ——Among others, Drs Roscoe Sensenich and Alfred S Giordano South Bend, Ind, will address the Chicago Society of Internal Medicine, City Club, February 27, on Brucella Abortus Infection in Man"

Report of Health Department—A preliminary report of the health department gives the Chicago death rate for 1927 at 11 52 It was 11 68 in 1926 and ten years ago 14 79 It is stated that in 1927 diphtheria was 60 per cent more prevalent than in the previous year and much more fatal the death rate being 14 1 per hundred thousand as compared with 7 3 in 1926 Pneumonia reached the highest point since 1921, with a death rate of 92 5 per hundred thousand Measles reached its biennial peak, 17,726 cases being reported Rabies accounted for eight deaths, the first in the city from this cause since 1920 There were twenty nine deaths from infantile paralysis among 148 cases Both death rates and percentages of total deaths were increased over those of previous years in heart disease, nephritis and cancer The typhoid death rate fell to 0 74 per hundred thousand of population as compared with 0 79 in 1926, and the tuberculosis death rate to 82 7 from 83 Almost 2,000 more cases of venereal disease were reported than in the previous year The total number of visits to the venereal disease clinics under the health department control was 200 639 an increase of about 14 000 The city health department examined 6,817 women and 192 men brought in by the police for sex offenses and of these about 10 per cent were found to have syphilis and about 25 per cent gonorrhea The number of deaths of children under 1 year of age per thousand births reported was reduced from 66 6 in 1926 to 62 75 in 1927 An increase of 688 births was reported over the previous year, making a total of 60,888 and a birth rate of 19 62 Since school opened in September, a drive has been made to immunize children under 7 years of age against diphtheria, the number immunized during the year was 44,600 as compared with 19,141 in 1926

KENTUCKY

Bills Introduced—Senate bill 161 provides that evidence of insanity as an excuse for the commission of a crime shall be inadmissible Senate bill 215 and house bill 293 provide for a board of chiropractic examiners and regulate the practice of chiropractic

Daviess County Reverts to Part-Time Health Officer—After having had a full-time health department for about eight years, Daviess County has gone back to the part-time health officer system The full-time health department had a director three nurses and a sanitary inspector It appears that the health department desired a larger appropriation ($7,500) than the fiscal court would appropriate to carry on the work Dr Robert E Griffin was elected part-time health officer at a salary, it is reported, of $40 a month

LOUISIANA

Health at New Orleans—Telegraphic reports to the U S Department of Commerce from sixty-eight cities with a total population of about 30 million, for the week ending January 21, indicate that the highest mortality rate (22 5) was for New Orleans, and that the mortality rate for the group of cities as a whole was 13 4 The mortality rate for New Orleans for the corresponding week last year was 23 2, and for the group of cities, 14

Safe Milk Served on Dining Cars—The president of the state board of health, Dr Oscar Dowling, reports that since January 20 all dining cars of the Southern Pacific lines leaving New Orleans have served milk graded according to the standard milk ordinance recommended by the U S Public Health Service and sponsored by sixteen states and adopted by 200 cities, eleven of these cities Dr Dowling states are in Louisiana The director of the dairy division of the state board of health has gone to Houston to give instruction in carrying out the standard milk ordinance which that city recently adopted

Society News—The Matas Number—The February issue of the *New Orleans Medical and Surgical Journal,* which is the Matas number, contains the addresses and response given at the dinner in honor of Dr Rudolph Matas, New Orleans, on his return from abroad There is also a complete bibliography of his publications The Orleans Parish Medical Society held a joint meeting with the New Orleans Gynecological and Obstetrical Society, February 15, the guests of honor were Drs John O Polak, Brooklyn, who spoke on The Toxemias of Pregnancy,' and Walter W Chipman Montreal, who spoke on "Acute Conditions of the Lower Abdomen in the Female'

MASSACHUSETTS

Dr Minot Appointed Director of Laboratory—The trustees of the Boston City Hospital have selected Dr George R Minot, Boston, to succeed the late Dr Francis W Peabody as director of the Thorndike Research Laboratory a department of the Boston City Hospital Dr Minot is well known for recent work on treatment of pernicious anemia by means of the so-called liver diet Dr Joseph T Wearn will continue in the laboratory in association with Dr Minot

Bills Introduced—House bill 597 would require a statement in writing from a vaccinating officer that the vaccine virus used by him is free from living germs of smallpox, bacilli of tuberculosis, bacilli of tetanus, and any other pus-producing micro-organisms House bill 707 would provide for a separate board of registration in osteopathy and would regulate the practice of osteopathy House bill 783 would require all prescriptions, recipes or formulas issued by any medical practitioner to be in writing and contain a statement as to the disease for which they have been issued

Personal—The resignation of Dr Marshall H Bailey as medical adviser to the students of Harvard University Cambridge, has been announced effective at the end of the current college year ——The president of Harvard University announced, February 6 the appointment, among others of Arthur Loveridge as associate in herpetology for one year from Sept 1 1927, Dr Allan Butler as fellow in medicine in the Medical School of Harvard University for the second half year and Cecil D Murray, Ph D as instructor in biochemical science ——Dr Louisa Paine Tingley, Boston, has furnished a room in the new Otis wing of the Massachusetts Women s Hospital in memory of her husband, Dr Tingley is consultant in ophthalmology at the hospital

Society News—Dr Joseph C Aub assistant professor of medicine, Medical School of Harvard University and associate in medicine Massachusetts General Hospital will lecture under the auspices of the Massachusetts Dietetic Association at 46 Beacon Street, Boston March 13 on Mineral Metabolism" ——Dr Austin W Cheever Boston addressed the Brockton Medical Club, January 19 on Modern Advances in Dermatology ——Dr Milton J Rosenau, Charles Wilder professor of preventive medicine and hygiene, Medical School of Harvard University, Boston, gave an illustrated lecture at the school, January 12, on A Sanitary Survey of Palestine' where he visited last summer ——Dr John W Farlow after many years of devoted service to the Boston Medical Library as librarian has retired Dr John W Bartol was elected president of the library for the ensuing year

MICHIGAN

Society News—William T Bovie Ph D, professor of biophysics Northwestern University Medical School, Chicago, will address the Wayne County Medical Society, Detroit, February 21, on "Light and Medicine', among others, Dr John E Gordon, Detroit, addressed the society, February 7, on "Treatment of Laryngeal and Advanced Diphtheria"——Dr John M Dodd Ashland, Wis, addressed the Gogebic County Medical Society, February 3 on "The Past, Present and Future of the Hospital'——Dr William E Shackleton has been elected president of the Kalamazoo Academy of Medicine for 1928——Dr John W Purdy, Long Rapids, addressed the Alpena County Medical Society, January 19, on "Toxemias of Pregnancy"

Scientific Editorship and Secretaryship Separated—At the meeting of the council of the Michigan State Medical Society Detroit, January 11, it was decided to divorce the scientific editorship of the journal of the society from the office of secretary and to elect an editor whose sole duty should be the editing of the scientific and editorial pages, Dr James H Dempster, Detroit was elected to fill that position The secretary will undertake the business management of the journal and the editing of the department of society activities Dr Frederick C Warnshuis Grand Rapids, editor of the journal for sixteen years, was reelected secretary Dr Dempster last year was president of the Wayne County Medical Society He is a graduate and professor of roentgenology of the Detroit College of Medicine and Surgery He will assume the duties of editor with the March issue

MISSISSIPPI

Bill Introduced—House bill 421 provides for a state board of chiropractic examiners and for the regulation of the practice of chiropractic

MISSOURI

Personal—The home and office of Dr John R Bruce, Marshfield, was totally destroyed by fire January 4——The office of Dr William E Aubuchon, Leadwood was destroyed by fire, January 9——It was announced, January 7, that Edgar Allen, Ph D professor of anatomy, University of Missouri School of Medicine, Columbia, has been appointed assistant dean of the medical school——Dr Major G Seelig professor of clinical surgery, Washington University Medical School, St Louis, lectured at the Mayo Foundation Rochester, Minn, January 23 on "The Course of Medical History Epitomized."——Dr George C Lee has been named medical superintendent of the Kansas City Tuberculosis Hospital, Leeds, succeeding Dr Herbert L Mantz

Society News—The retiring president of the St Louis Medical Society, Dr Charles A Vosburgh, entertained the children of the members of the society at the auditorium, Dec 29, 1927, with motion pictures and refreshments, about 150 children were present——Dr Arthur R McComas, Sturgeon, has been appointed chairman of the committee on arrangements for the next annual meeting of the state medical society at Columbia, May 14-17——The St Louis Medical Society devoted its January 31 program to a discussion of poisonous snakes, the speakers were Dr Forest H Staley, St Louis, Messrs R M Perkins and George Vierheller of the St Louis Zoological Gardens and Robert Miller whose subject was "What a Boy Scout Should Know About Snakes"——At a public health meeting of the St Louis Medical Society, St Louis, February 7, Dr Thomas Parran, Jr, U S Public Health Service, gave an address on "Medical Aspects of Social Hygiene", Dr Parran, in 1921, was state director of rural sanitation under the state board of health, Mr John G Lonsdale, president, National Bank of Commerce, St Louis, addressed the society, January 17, on "The Professional Man s Finances" This was a joint meeting with the dental society——The Kansas City Alumni Chapter of Phi Beta Pi will hold a dinner dance at the President Hotel, March 10, Dr Lawson G Lowrey, New York, supreme secretary, will be present

NEW HAMPSHIRE

Personal—A memorial is to be established to the late Dr George Cook of Concord by the Alpha Kappa Kappa fraternity in the form of a student loan fund to assist worthy medical students in their last two years of study Dr Cook was an officer of the fraternity for many years previous to his death in 1922——Dr David Cheever, Boston, addressed the Portsmouth Medical Society at the Portsmouth Hospital recently, on The Stomach Historically and Surgically Considered"——Dr Howard A Streeter, health officer of Manchester, was presented with a medal by the Kiwanis Club of that city, Dec 19, 1927, after having been selected by a committee as the person who rendered the best service to the community during the year The presentation was made by the Rev Mr Lane, who summarized the work done by Dr Streeter to improve the health and sanitation of Manchester Dr Streeter came to Manchester in 1921

NEW JERSEY

Bills Introduced—Senate joint resolution 5 provides for a commission to investigate the need of additional hospitals and to determine to what extent county appropriations should be made to hospitals in which free surgical and medical services are rendered Senate bill 106 would amend the Workmen s Compensation Act so as to require the employer to furnish artificial limbs and other appliances necessary for the treatment of an injured employee House bill 119 provides for a state board of examiners in naturopathy and regulates the practice of naturopathy

NEW YORK

Society News—Dr Arthur J Bedell, Albany, addressed the Bronx County Medical Society, recently, on "Fundus Photograph, Its Value to the General Practitioner, the Specialist and the Patient"——The Cattaraugus County Board of Supervisors abolished the board of managers of the county laboratory, January 12, and transferred their duties to the Cattaraugus County Board of Health

Bills Introduced—Senate bill 521 provides that any person who has conducted a pharmacy since 1900 may incorporate if he so desires before September, 1928 House bill 664 would amend the civil practice act so as to provide that actions for malpractice must be commenced within one year after the cause of action has accrued House bill 684 provides that a practitioner of optometry shall not use the title "Dr" unless his name is followed by the word "optometrist" House bill 741 would amend the Workmen's Compensation Act so as to remove the provision requiring physicians to report within twenty days House bill 849 would provide for a commission to investigate the narcotic situation

New York City

George Fasting, Quack, Sentenced to Jail—George Fasting, who maintains offices at 632 Lexington Avenue, Manhattan, claimed to have graduated from the American School of Naturopathy in 1925 He advertised in Scandinavian newspapers According to a report made by the authorities of the city department of health, Fasting claimed to have sent patients for diagnosis to Dr Sidney H Barovick, Manhattan, and Dr John F G Luepke Brooklyn Fasting was convicted in special sessions, January 30, for violation of the medical practice act, and was sentenced to thirty days in jail

Investigation of "Ambulance Chasing" Lawyers—The appellate division of the supreme court has ordered an extensive investigation of ambulance chasing attorneys and of the activities of casualty company claim agents in accident cases The court acted in response to a petition from a joint committee of lawyers representing the bar association of New York and Bronx counties A supreme court justice will be appointed to conduct the inquiry who will have sufficient power to investigate the books of attorneys or of accident insurance companies if necessary This is considered a novel proceeding in New York

American Orthopsychiatric Association.—The fifth annual meeting of this association will be at the Russell Sage Foundation, 130 East Twenty-Second Street, February 24 25, under the presidency of Dr Karl A Menninger, Topeka, Kan All persons interested in the topics under discussion are invited Among the speakers will be Drs Jacob I Kasanin, Boston, on 'Personality Changes Following Cerebral Trauma , Samuel Z Orgel, New York, "A Genetic Study of Mongolism", Ira S Wile, New York "The Orientation of Conduct Disorders," and Herman M Adler, Chicago, "Intelligence of Criminals" The purpose of this association is the centralizing of the technic objectives and aspirations of physicians psychologists and social workers whose primary interests lie in the problems of human behavior

Personal—Dr Walter M Brunet has been appointed secretary of the social hygiene committee, New York Tuberculosis and Health Association Dr Linsly R Williams was elected president of the association at the annual meeting of the board, February 7, succeeding Dr James A Miller Dr Brunet for many years has been associated with the

American Social Hygiene Association ——Dr Thomas H Russell, visiting surgeon to Gouverneur Hospital was recently tendered a gold scalpel by the house staff ——Oscar Riddle Ph D, Carnegie Institution of Washington and William Crocker, Ph D, director, Boyce Thompson Institute for Plant Research, Yonkers, addressed the American Institute at a luncheon, February 18, at the Town Hall Club, 123 West Forty-Third Street, on "Man's Dependence on Plants" ——Dr Alfred M Wise has been appointed attending pediatrician to the Jewish Hospital, Brooklyn ——Miss Winifred Stuart Gibbs editor of the *American Food Journal* died at her home, February 8 —— Dr Alfred Adler Vienna, has returned to New York to lecture on psychologic subjects

Society News—The New York Electrotherapeutic Society held a symposium on sacro-iliac conditions February 1 the speakers were Drs Marius N Smith Petersen Boston, Leon T LeWald, William B Snow, Reginald H Sayre, Fred H Albee, Raphael Lewy and Adoniram Judson Quimby ——The New York Academy of Medicine conducted a symposium, February 2, on alcoholism, the speakers were Dr Charles Norris, chief medical examiner, and Alexander O Gettler, Ph D, assistant medical examiner ——Dr Orrin Sage Wightman has been elected president of the Riverside Practitioners Society, and Dr Walter Truslow, president of the Associated Physicians of Long Island ——Dr Ira S Wile addressed the Ward's Island Psychiatric Meeting January 25, on Lying as a Social Phenomenon"——Dr Louis H Bauer chief of the medical section of aeronautics, U S Department of Commerce, Washington D C, addressed the Monday Night Club January 30, on 'Medical Aspects of Flying and Its Contribution to the General Practice"——Dr Francis Carter Wood addressed the Harlem Medical Association, February 1, on "Changing Attitudes in the Treatment of Cancer' —— Dr Mynie G Peterman Milwaukee addressed the New York Academy of Medicine February 9, on 'The Ketogenic Diet' ——The staff of the Bronx Maternity Hospital is organizing a clinical society which was addressed February 9 at a dinner by Dr John O Polak, Brooklyn ——The Medical Society of the County of Queens is planning a new permanent home to be erected on its lot at Queens Boulevard and Puritan and Seminole avenues ——An aristogenic association was formed, February 2 at a dinner at the Union Club for the purpose, according to the *New York Medical Week* of extending human life and of developing leaders with a view to improving the human race, among the guests at the dinner were Drs Charles L Dana, Charles Gordon Heyd E H Lewinski-Corwin, Ph D and Charles Ward G Crampton ——Dr Henry H. Forbes was elected, February 3 president of the International Medical Club for 1928 ——Dr Joseph Haas was elected president of the Bronx Urological Society at an organization meeting January 23 ——Dr Milton A. Bridges addressed the Medical Association of the Greater City of New York February 20, on Relationship of Precordial Stress Blood, Uric Acid and Salicylate Therapy" and Dr Leon T LeWald, on "Diaphragmatic Hernia Fluroscopic and Radiographic Appearances Differential Diagnosis'

NORTH DAKOTA

Report on Fargo's Child Health Demonstration—The director of the Commonwealth Fund, New York, in the ninth annual report, states that the child health demonstration carried on by the fund for the last five years at Fargo has been completed, and that the city has made provision to continue every essential activity at its own expense For 1928 the health budget of the city of Fargo calls for an expenditure of $1 13 per capita as compared with 28 cents in the year preceding the opening of the demonstration The report states further that the health work of the city was rated as 814 out of a possible 1 000 by the American Public Health Association as compared with 320 the year before the demonstration began.

OHIO

Battelle Institute of Chemistry—A tract of about five acres along the Olentangy River opposite Ohio State University has been secured by the recently incorporated Battelle Memorial Institute, and the first two buildings costing about $500 000, will be started this spring The institute is a corporation not for profit which has been endowed with a large sum of money from the estate of John Gordon Battelle his wife and his son to perpetuate a trust arising from their joint wills While the main object of the institute will be industrial research under the fellowship system the income from the funds of the institute itself will be devoted to the broad benefit of American industry and to scientific research The will provides that any profit arising from the operation of the institute be devoted to charity or to the support of other scientific research The first building will be a memorial to the Battelle family comprising administrative offices library, auditorium, museum machine shop, stock rooms and laboratories As was recently announced in THE JOURNAL Gerald L Wendt Ph D dean of the school of chemistry and physics, Pennsylvania State College has been selected as director of the institute which, it is expected, will begin operations in the autumn

Society News—Dr Carl J Wiggers, professor of physiology, Western Reserve University School of Medicine, Cleveland addressed the Toledo Academy of Medicine, February 3, on 'Registration of Heart Sounds from the Viewpoint of the General Practitioner"——The Cleveland Academy of Medicine and the Cleveland Medical Library Association are giving a series of lectures on "The Art and History of Medicine" at the medical library Dr Carl A Hamann spoke, February 13, on 'The Medical Student," and Dr W Todd on 'The Medieval Physician', Drs Charles W Stone and Samuel W Kelley will lecture March 12, on "The Golden Age and the Golden Rule" and 'Doctors and Debtors," and Drs George E. Follansbee and Frank E Bunts, April 9, on Why Traditions, Ideals and Ethics' and "Observations on Development of Antiseptic Surgery During the Last Forty Years Medical students and interns are especially invited Maud Slye of the University of Chicago will give an illustrated lecture, February 29 at the Amasa Stone Memorial Chapel, Western Reserve University, Cleveland, on 'Relation of Heredity to Cancer" At the annual meeting of the Cleveland Medical Library Association January 16, Dr Samuel W Kelley was elected president for 1928 Dr Stewart R Roberts, professor of clinical medicine, Emory University School of Medicine Atlanta Ga addressed the association on William Withering and Digitalis" Dr Isador C Rubin, New York addressed the Cleveland Academy of Medicine February 17, on "Sterility Due to Tubal Occlusion,' and Dr Henry L Sanford on 'Temporary Sterility in the Male ——The Logan County Medical Society held a symposium on cancer, January 6 at Bellefontaine, the speakers were Drs William H Carey Frank B Kaylor and William W Hamer ——Drs William S Fulton and William K Kalbfleisch both of Wheeling W Va, addressed the Muskingum County Academy of Medicine, Zanesville January 4 on gallbladder disease ——The Cincinnati Academy of Medicine cancelled its regular meeting January 23, for the first time since it was founded a hundred years ago to permit its members to attend a testimonial dinner in honor of the president of the University of Cincinnati, Frederick C Hicks Ph D

OREGON

Personal —Dr Wesley E Gatewood, formerly associate professor of medicine, State University of Iowa College of Medicine Iowa City, has become affiliated with the University of Oregon Medical School and is practicing in Portland

Dr Selling Appointed Head of Department—Dr Lawrence Selling Portland has been appointed clinical professor of medicine and head of the department of medicine of the University of Oregon Medical School Dr Selling is a graduate of Yale, 1904, and of Johns Hopkins University Medical School 1908 where he served an internship and one year as a fellow in pathology and then studied two years in Germany He served overseas with base hospital 46 and is a member of the staffs of Emanuel St Vincent's Multnomah County and Doernbecher Memorial hospitals Portland Dr Selling was guest of honor at a dinner given by the faculty of the University of Oregon Medical School, January 31, Dr Richard B Dillehunt the dean, was toastmaster

Chiropractor and Druggist Fined—Mrs R. E Lang Portland chiropractor, was found guilty of practicing medicine without a license by a circuit court jury, January 12 Mrs Lang was convicted in the district court, Nov 1 1927 fined $150 and sentenced to ten days in the county jail she appealed to the circuit court and Judge Stevenson affirmed the sentence of the lower court Mrs Lang administered various medicines to a patient who subsequently died M E Heath Portland druggist, pleaded guilty January 24 to violation of the statute which prohibits the sale of any drug for the treatment of venereal disease except on the prescription of a licensed physician Heath was fined $50 A campaign is being waged against violations of public laws by Special Agent C A Morrow of the state board of medical examiners These cases were prosecuted by Deputy District Attorney C W Kirk, who has successfully prosecuted many others in the last few months

PENNSYLVANIA

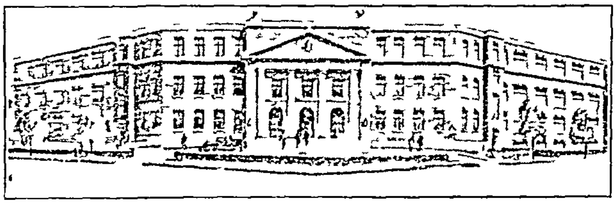
Personal—Dr Tamoh Ikeda of the bureau of public health, Tokyo, Japan, spent January working with Prof Raymond A Dutcher in the vitamin laboratory of the Pennsylvania State College, he is in this country under the auspices of the Rockefeller Foundation

State Health Department Item—The state department of health considers its bureau of vital statistics the largest state bureau in the United States It has offices at Harrisburg, Pittsburgh and Philadelphia, and during 1927 issued a total of 71,077 certified copies of birth and death records for which it collected more than $35,000 in fees that were turned over to the state treasury

Philadelphia

Personal—Dr Joseph C Doane superintendent of the Philadelphia General Hospital, will address the Cleveland chapter of the American Association of Hospital Social Workers February 21, at the Hotel Winton, Cleveland, on hospital social service and its relation to the practice of medicine——Dr Charles H Frazier has been reelected president of the Public Charities Association of Pennsylvania

College of Pharmacy Dedicates New Building—The Philadelphia College of Pharmacy and Science will dedicate a new college building at Forty-Third Street and Kingsessing and Woodland avenues, February 23 on which day 107 years ago, the college was founded The building is of the Georgian type, of reinforced concrete trimmed with Indiana lime stone and faced with dark red brick It is within walking distance of five trolley lines on a triangular tract facing Clark Park All the class room and laboratory equipment is new The third floor contains a museum, a department of biology and pharmacognosy, and laboratories of bacteriology and clinical chemistry, the second floor has the library, the editorial rooms of the *American Journal of Pharmacy* the dispensing laboratory, the advanced chemistry and industrial chemistry departments and class rooms The auditorium is on the first floor, as are also lecture rooms, a rest room a men's lounge the offices the analytic chemistry department and the operative chemistry department The class rooms are insulated as to sound transmission During the first century of its existence, the college occupied four different homes It was on Tenth Street for more than fifty years There are 6000 alumni of the institution, and the graduating classes now number several hundred students Dr Wilmer Krusen, until recently director of the department of health of Philadelphia, has been elected president of the college



TENNESSEE

Personal—Dr Lloyd M Graves, Memphis has taken up the duties of the superintendent of the city board of health——Dr William W Grant, for many years a resident of Denver, has taken up his residence at Jackson, where he has become affiliated with the Crook Sanatorium Dr Grant was for many years a member of the Board of Trustees of the American Medical Association and formerly was president of the Colorado State Medical Society

Society News—Among others Dr Otis S Warr, Memphis addressed the Five County Medical Society at Savannah, January 31, on Angina Pectoris ——The Tri-State Medical Association (Mississippi Arkansas, Tennessee) will hold its forty-fourth annual convention at the Hotel Peabody, Memphis February 29-March 2 under the presidency of Dr Harris T Collier, McKenzie The public will be invited to a meeting Wednesday Among many other speakers, George E Vincent, Ph D president Rockefeller Foundation, New York, will discuss 'The Doctor and the Public," and Dr Eugene L Fisk New York Periodic Health Examinations'

WISCONSIN

University Drops Hundreds of Students—The registrar of the University of Wisconsin has reported to the board of visitors that about 1700 students who entered the university in the present year, out of a total enrolment in the freshman class of 2,900, will not return next fall The students will be excused from reentrance according to the Boston *Transcript* because of their inability to maintain the academic level required at the university According to the report, many of those to be dropped came to college with the belief that they would find on the campus a "glorified playground"

Litigation Dismissed—The pending litigation to revoke the license to practice of Dr Emil C Schoene has been dismissed, according to the Milwaukee *Journal,* following an agreement between the district attorney and the attorneys Dr Schoene was sentenced for manslaughter in 1922 to four years in the state prison after the death of an infant following an illegal operation Action was then taken to revoke his license to practice The state supreme court sustained the decision of the judge of the lower court in overruling the physician's demurrer Dr Schoene was pardoned in 1925, several months before the expiration of his term

Society News—Dr J E Holst of the University of Copenhagen addressed the University of Wisconsin Medical Society February 6, on 'Occurrence and Importance of Glycosuria' ——Dr David C Hall has been elected president of the King County Medical Society, Seattle, for the ensuing year——Among others Dr John P Koehler, health commissioner of Milwaukee, addressed the Medical Society of Milwaukee County, February 10, on 'New Health Department Activities and Their Relation to the Medical Profession,' and Dr Frederick J Gaenslen on acute and chronic osteomyelitis——The Milwaukee Academy of Medicine and the pediatric society held a joint meeting February 14, which was addressed by Drs Frederick F Tisdall Toronto Canada, on "Sunshine and Skyshine Their Ultraviolet Content and Use in the Practice of Pediatrics," and Samuel Amberg, Rochester, Minn, on "Hypertension in the Young"

GENERAL

News of Epidemics—Six families were reported under quarantine at De Pere, Wis, recently on account of smallpox There are said to be many other cases in Brown County——Four cases of smallpox among the students of the University of Indiana at Bloomington were reported, January 27——To prevent the spread of diphtheria in Chadron, Neb, the public schools were recently closed in order to fumigate the buildings——Measles is spreading in Baltimore, there were 480 new cases last week as compared with three cases for the corresponding week of 1927 Measles appears to be responsible for an increase in pneumonia as 36 per cent of the forty-two deaths from pneumonia last week in Baltimore were in children under 10 years of age

Cancer Society Meeting—The American Society for the Control of Cancer will hold its annual meeting March 3, in New York which it is expected will be attended by the directors of the various cancer research laboratories in the United States public health authorities and some of the state chairmen In the morning Dr Francis Carter Wood will demonstrate modern cancer research at the Crocker Laboratory, Henry F Vaughan D P H, health commissioner of Detroit, will speak at a luncheon at the Biltmore Hotel on Functions of Health Departments in the Control of Cancer,' and Dr Jonathan M Wainwright, Scranton Pa, on What the Medical Profession Should Do About Cancer Short discussions of cancer control in its practical aspects and a short business meeting will take up the afternoon

Society News—The American Gynecological Society will meet at the Mayflower Hotel, Washington, D C April 30-May 2——Henry F Osborn, LL D, American Museum of Natural History, New York, has been made president-elect of the American Association for the Advancement of Science——The American Pharmaceutical Association will hold its seventy-sixth annual meeting in Portland, Maine, August 20 25 with headquarters at the Eastland Hotel instead of meeting at Poland Springs which was originally chosen This will be the first meeting of the association in Maine The local secretary for the meeting is Mr E F Carswell Gorham——The new officers of the Federation of State Medical Boards of the United States are Dr Guy L Connor, Detroit, president Drs Herbert M Platter, Columbus, president elect, Harold L Rypins, Albany, N Y, vice president, and Walter L Bierring, Des Moines, secretary-treasurer

Early Diagnosis of Tuberculosis Campaign—The National Tuberculosis Association, with the assistance of the state and community associations, will conduct a publicity campaign during March throughout the United States to emphasize the importance of early diagnosis of tuberculosis It is requested that medical, health, social and civic organizations participate in this movement to inform the public of the danger signs of early tuberculosis, and to stimulate interest on the part of physicians in the recognition of early tuberculosis Meetings will be held, pamphlets distributed, and the films "Let Your Doctor Decide,' and "The Doctor Decides" exhibited The publicity material has been approved for accuracy by the National Tuberculosis Association, which will finance the campaign from the proceeds of the Christmas seal sale The headquarters office of the National Tuberculosis Association is 370 Seventh Avenue, New York

Ophthalmologic News—In view of the guide to medical literature furnished by the *Quarterly Cumulative Index Medicus* published by the American Medical Association, the editor of the *American Journal of Ophthalmology* has decided to discontinue the list of current literature heretofore published in that journal——The Pittsburgh Ophthalmological Society recently met at the new general hospital, Washington Pa, at the invitation of Dr John B McMurray, who entertained the members at dinner at the country club and provided a scientific program——Dr and Mrs Casey A Wood, formerly of Chicago, after two years' absence abroad, are spending the winter in California——Dr William L Fox has been appointed to the ophthalmologic division of the city hospital, Cleveland——The Pittsburgh Slit-Lamp Society is studying Fuchs' two volumes on the histopathology of the eye throwing on a screen the photomicrographs and discussing them——Dr Edward V L Brown, clinical professor and chairman of the department of ophthalmology, University of Chicago, has given to the university his library of ophthalmology

Origin of Scientific Men—A study of the origin and distribution of men whose contributions to science have been of the greatest value appears in the fourth edition of the "Biographical Directory of American Men of Science," published in December by James McKeen Cattell ScD, editor of *Science* The methods of selecting these names are designated in the book Among the 601 names added to the last two editions, it appears that New York led in the production of scientists with sixty-seven Ohio followed with forty-nine, Massachusetts, forty-eight Illinois, forty-five, Pennsylvania forty-one, Iowa twenty-seven, Wisconsin, twenty-four, Missouri, twenty-one, Indiana eighteen, Connecticut sixteen, Minnesota, fourteen, Maryland thirteen, Michigan, thirteen, California, eleven, and Kansas, eleven The number of scientific men coming from the south Atlantic, south central and the western divisions is small Of the 1,000 leading scientific men selected by the editor in 1903, Massachusetts produced 134 and Connecticut, forty, New York in proportion to its population had then produced about half as many, and the north central states about a third as many About seven years later the birth rate of leading scientific men in Massachusetts had fallen from 109 per million of population to 85, and in Connecticut from 87 to 57, the birth rate of leading scientists had then increased in Michigan from 37 per million of population to 74, in Minnesota from 23 to 59, and in Wisconsin from 45 to 54 As compared with New England the intellectual fecundity of the north central states, Dr Cattell writes, has increased still further extending westward and southward to Iowa, Missouri and Kansas The situation in New England is considered ominous, as every state has lost and the rural population appears to be becoming intellectually sterile The losses of New York, New Jersey and Maryland startle the editor, who suggests that it may be because of the enormous increase in wealth in these states Pennsylvania and Delaware remain nearly stationary while there are small gains in most of the south Atlantic and south central states These losses of the eastern states are counterbalanced by the gains of the central states, all of which have gained except Michigan, although the gains in Ohio and Indiana are small As these three states are the most eastern of this group they appear to be following in the wake of the Atlantic seaboard To the west of the central states, the trend predicts large future developments Thus westward the course of science takes its way

CORRECTION

Diphtheria Prophylaxis Among Asthmatic Patients—In the article by Dr G L Waldbott (The Journal, January 28, page 290) about the middle of the first column of the article, it was stated that Park does not recommend general diphtheria immunization among adults unless the patient gives a negative Schick test The word 'negative' should have read "positive '

Foreign Letters

LONDON

(From Our Regular Correspondent)

Jan 28 1928

Reports on Radium Therapy

The Medical Research Council, which was supplied by the government with a stock of radium for distribution to the principal surgical centers has issued a summary of the reports received from centers for the year 1926

Cancer of the Breast—Comparatively large quantities of radium acting for about twenty-four hours were used at the Middlesex Hospital At St Bartholomew s Hospital a number of distributed foci containing small quantities of radium were allowed to act for about a week By comparison of results it is hoped to ascertain which technic is the better At the Middlesex Hospital, in thirteen cases of recurrent carcinoma of the breast eleven radical operations and two local or incomplete operations were performed In three cases recurrences disappeared finally in seven they disappeared but returned locally or elsewhere and in three cases there was little or no improvement The results of treatment of seven cases of recurrent carcinoma were given, in four, recurrences disappeared and did not return in one the growth was excised before treatment and there was no recurrence in two there was little or no improvement Five primary growths were treated similarly in four cases they disappeared without recurrence and in one there was great improvement Surface radium therapy was tried at the Middlesex Hospital in seven cases of primary carcinoma of the breast, with considerable benefit in most cases It was also used in twenty cases of inoperable supraclavicular recurrence and in thirty-three cases of nodular recurrence Ten cases of recurrent carcinoma with cutaneous nodules were treated with radium in conjunction with the roentgen ray at King s College Hospital, the nodules generally diminished in size and in some cases disappeared but seven out of ten cases showed evidence of mediastinal involvement Cardiff Royal Infirmary reported five cases of recurrent carcinoma treated with comparatively large quantities of radium from one to three days, three patients were relieved, one was unrelieved and one died

Cancer of the Cervix —University College Hospital reports that in fifty-eight inoperable cases traced from October 1921 to October, 1926, sixty-six patients were alive three of whom had recurrences and fifty-two had died, the average duration of life being fifteen months Of thirteen operable cases, seven of the patients were alive and six had not had recurrences Of twenty-two patients treated with radium and subsequently by Wertheim s operation, five were alive without recurrence and three, who also survive have developed recurrences at the end of fifty-four fifty-three and eighteen months, respectively St Bartholomew s Hospital reports on 196 patients treated with radium since May, 1921 In 146 cases the occurrence of hemorrhage before and after treatment was noted and it was found that it ceased entirely in 124, with the exception of a return shortly before death in some cases Hypertrophic growth disappeared in sixty of sixty-nine cases noted Of ninety-two cases of malignant ulceration this disappeared, temporarily or permanently, in sixty-two Three main lines of technic were used (1) introduction of one or more radium tubes into the cervical canal, supplemented by applicators packed round the cervix in the vaginal fornices, (2) introduction of one or more radium tubes into the cervical canal tubes being inserted into the cervical tissues, (3) introduction of a large number of tubes of low radium content into the cervical tissues The introduction of single tubes of radium into the cervical canal has been found inadequate unless supplemented in one of the ways mentioned

Cancer of the Mouth, Nasopharynx, Larynx and Esophagus—This is dealt with in several reports At St Bartholomew s Hospital primary growths of the mouth often yielded to radium treatment, whereas glands affected did not It is thought that the resistance to radiation varies with the region where the growth arises and depends on some intrinsic quality of the tissues The technic adopted in the case of carcinoma of the nasopharynx and larynx is described in detail, including the making of a large window in the thyroid cartilage so as to allow the needles to be placed as close to the growth as possible

Sarcoma of the Rectum and Bladder—At Birmingham, twenty advanced and inoperable cases of carcinoma of the rectum were treated seventeen being columnar-cell Improvement was obtained in four cases, while eight were not benefited and three patients died the remaining five are too recent for any conclusions to be drawn Colostomy is advised before treatment by radium, though removal of the coccyx is not advocated St Peter s Hospital reported on the treatment of five cases of carcinoma of the bladder In three cases no benefit resulted, apart from the arrest of the hematuria, but in two cases there was also considerable improvement in the general condition Many of the sarcomas were found highly sensitive to radium, growths of considerable size diminishing when adequate doses are given Among the lymphosarcomas, however, recurrence was more frequent

International Convention on Cancer Research

At a meeting of the grand council of the British empire cancer campaign it was announced that an international convention on cancer research was being convened for next July in London Sir John Bland Sutton, past president of the Royal College of Surgeons and vice chairman of the campaign, had accepted the position of president of the convention The work of the convention will be divided into the following sections pathologic, diagnosis, medical treatment, surgical treatment, roentgenologic treatment and public health and statistics Chairmen had been appointed for some of these sections Sir Thomas Horder, with Sir William Willcox, as vice chairman of the diagnosis section, Professor Lazarus-Barlow, pathologic section, Sir Charles Gordon-Watson, surgical treatment section, Professor Sidney Russ, with Dr Robert Knox as vice chairman roentgenologic treatment section, and Lieut-Col F E Fremantle, public health and statistics section Invitations are being sent to all parts of the world to those whose names are closely associated with modern research into the cancer problem, and all the universities and medical schools of the United Kingdom will be invited

Is Research Overdone?

In a letter to the *Times*, Dr G S Moore, health officer of Huddersfield, argues that research is badly overdone Influenced naturally, but unduly, by the enormously beneficial results to the human race of a very few outstanding discoveries—those of Simpson, Pasteur, Lister and Manson-Ross, he says, exhaust the list—we endow "research' with potentialities beyond reason and with funds correspondingly lavish In 1887, in celebration of Queen Victoria's jubilee, £1,500,000 was collected and handed to a London hospital for cancer research Prudently invested, this capital would yield $75,000 per annum, what seems to be of itself an adequate endowment Yet, after forty years, what results are discernible? From the practical point of view of the person stricken with the disease, they are a minus quantity It is true that a vast inchoate mass of information has been accumulated, but the actual death rate from cancer has increased by something like 100 per cent since the year 1887 Dr Moore urges colleagues to turn their backs on the alluring idea of short cuts to success by way of laboratories Another health officer, Dr James Fenton, recommended in the *Times* preventive research to reduce maternal mortality at present about 4 or 5 per thousand But Dr Moore replies that by the exercise of common sense, added to earnest work guided by experience, for far less money than research would call for we now have in our hands the means of achieving satisfactory results He has thus obtained a remarkable reduction of the maternal mortality in Huddersfield

Malta Physicians Object to the Term Mediterranean or Malta Fever

The disease sometimes called Mediterranean or Malta fever has been labeled with a multitude of names, thirteen have been given to it on account of its supposed resemblance to typhoid or to malaria, the character of its fever and the symptoms gave rise to fourteen others, and nine more were derived from the conditions that from time to time were considered to favor its prevalence From the localities in which it was recognized it came to be called Mediterranean fever, Malta fever, Italian fever, Neopolitan fever, Rock or Gibraltar fever, Cyprus fever or Crimean fever The name "undulant fever," originally proposed by Capt M L Hughes of the army medical staff in 1897, was recommended by the international congress of medicine held in London in 1913 and is generally used by English writers The terms "Malta' or 'Mediterranean fever," however, are frequently used The Malta physicians have issued a protest against these names, because of their damaging effect on the reputation of the island They appeal to medical writers to discard them in favor of the more proper name undulant fever The term undulant fever," though not perfect, is the most suitable designation as it describes one of the most constant and characteristic features—the undulations of the temperature curve The temperature constitutes the primary, in many cases the only, clinical manifestation, and, although the curve may not always be of the 'undulant' type, yet the phenomenon is sufficiently frequent and typical to justify the term Geographic names for specific diseases are undesirable from a scientific point of view They are mainly relics of the times when the miasmatic theory of disease held sway and each kind of fever was considered to be caused by infective emanations" inherent to the particular country or locality where it prevailed The result of the geographic names was that under the term "Mediterranean" fevers were frequently grouped indiscriminately such diseases as typhus and typhoid yellow fever, another fever accompanied by jaundice of doubtful nature, sandfly fever, relapsing fever and probably malaria cases and other feverish diseases still unclassified Moreover, undulant fever is not confined to the island of Malta or to the Mediterranean, it has been found in other European regions and in China and America, South Africa and India Nor, it may be mentioned, is it peculiar to the Maltese goat

Biologic Teaching for Politicians

In a letter to the *Times*, on behalf of the Eugenics Society, of which he is president, Major Leonard Darwin (son of Charles Darwin) advocates the teaching of biology in schools because the appreciation by the intelligent public of the great national issues which hang on the biologic composition of future generations of citizens is the only adequate safeguard against possible dangers The laws of heredity are now recognized as of vital importance, not only for increasing and improving supplies of agricultural products but for human life itself He submits that it is not alone the aspirant to a post in agricultural teaching who must henceforth possess the necessary scientific equipment, it is even more important that the man aspiring to a place in national leadership, whether at home or overseas, should have a firm grasp of all available knowledge of those laws which underlie human life and human evolution

PARIS

(From Our Regular Correspondent)

Jan 18 1928

The Excessive Mortality in France

M Paul Strauss, senator of the department of the Seine and former minister of health, presented recently before the Academy of Medicine the statistics collected by the health section of the League of Nations on the birth rate and the mortality of the different nations While France is not becoming depopulated in the absolute sense of the word, it shows at present the lowest excess of births over deaths In regard to the birth rate, France can be reasonably content Whereas the birth rate has declined 26 per cent in Germany 22 per cent in England and 13 per cent in Italy, it has actually increased 0 53 per cent in France since 1913 But the mortality statistics are more disquieting For a number of years the mortality rate among infants and children in France has been considerably higher than that of England Tuberculosis causes the deaths of twenty-five per 10,000 of persons belonging to the 25-35 age group, whereas the corresponding figure for England is thirteen Leon Bernard stated that the public authorities can reduce the present mortality, and emphasized that it was less expensive for the country to create health services than to lose inhabitants through negligence

The Proposed Demolition of Insalubrious Sections of Paris

The city of Paris, imitating the example of London, has decided on the demolition of two hundred buildings in the Saint Merri quarter that have long since been recognized as unhygienic The buildings are used as lodging houses and are very old Nevertheless, lovers of the picturesque deplore demolition The buildings are neglected by their owners, who receive a mere pittance from their miserable tenants, among whom all sorts of epidemics, including tuberculosis, take a large toll of victims

The Reconstruction of Paris Hospitals

Influenced by the report of M Henry Grangier, the municipal council of Paris has approved the plans of the director of the Assistance publique, M Louis Mourier, with regard to the restoration of several old Paris hospitals For the realization of the project the sum of $7,500,000, payable in annual instalments, will be appropriated. Four large hospitals the lamentable condition of which has been recognized for some time although it has been impossible to apply the remedy will be the objects of particular attention The four hospitals in question are Broussais and Bichat, which will be rebuilt on their present site, Beaujon, which will be replaced by a new building at Clichy on a site belonging to the Assistance publique, and Charite, which is destined to disappear completely, while the section that it has served will be attached to that of the Broussais Hospital, which will become a large modern hospital with a thousand beds The program of reconstruction outlined provides also for the enlargement of the Claude-Bernard Hospital for contagious diseases and the creation of two suburban hospitals for grave cases of tuberculosis The appropriation includes also an allowance of $1,120,000 for the creation of homes for the aged

Sentences Imposed on Physicians for Abortion

Two Paris physicians have recently had a severe sentence imposed on them on being convicted of practicing criminal abortion on a young woman, who died as a result of their intervention Both physicians received a sentence involving three years in prison, a fine of $200 and suspension for a period of five years of the right to practice medicine One physician had performed the abortion, and the other had brought him the young woman for that purpose Abortion in France is severely punished, as it is in England, whereas it is legally practiced in soviet Russia and discreetly tolerated in certain other countries Abortion is in reality relatively frequent among all classes of society not only among young unmarried women and widows but also among married women in comfortable circumstances who fear to increase their family burdens The real cause of the depopulation of France lies here Everybody knows it, though feigning to be ignorant Midwives especially are prone to practice abortion, which thus becomes all the more dangerous owing to their lack of medical training The intervention of physicians is, in reality exceedingly rare Physicians receive the most severe sentences for abortion it being alleged that their higher social position should render them more scrupulous The main purpose of the severe sentences appears to be the idea of awakening a salutary fear among the medical profession and of impressing the general public with the vigilance of the authorities

The Mohammedan Dispensary in Paris

Some time ago the Institut musulman created in Paris a Mohammedan dispensary to provide a consultation center for the population of Algerian and Moroccan origin, which is at present very numerous consisting chiefly of factory workers who were brought in during the war and who have settled down in the capital and the suburbs These patients prefer to be treated according to the customs of their religion, and many of them have need of an interpreter This dispensary gradually lapsed into undesirable hygienic conditions, so that its complete reorganization has become necessary Though still located in the mosque it will be nevertheless attached to the bureau of social hygiene of the department of the Seine, and will be subsidized by the minister of health

BELGIUM

(From Our Regular Correspondent)

Dec 21 1927

Changes in Cancer and in Precancerous Conditions

Before the Academy of Medicine Sloss and Reding recently presented researches to show that changes in the sugar regulatory mechanism are manifest in the precancerous stage, they differ from the changes of the cancerous stage only in the matter of intensity In avowedly cancerous subjects there is a more or less accentuated disturbance of sugar regulation This disorder is manifested by the considerable height and by the retardation of the peak of the hyperglycemia curve, also by the duration of the phase of hyperglycemia The disorder is not affected by the site of the tumor or by its histologic nature Radiologic treatment exerts a profound and durable influence on the sugar regulatory mechanism in cancerous subjects, and the action varies with the clinical effect obtained

Antituberculosis Vaccination by the B C G Vaccine

Before the Congres international d hygiene Dr Van Beneden reported recently the results secured from the administration of the B C G antituberculosis vaccine to 470 children Through Dr Malvoz the authorization was obtained from Professor Calmette to establish in the bacteriologic institute of Liege a service for the preparation and distribution of the B C G vaccine in Belgium

In 1924 the vaccine was administered to twenty-three in 1925 to 115, and in 1926 to 236 new-born Toward the end of 1926, information was requested in regard to twenty-three children vaccinated more than twenty-four months previously and 115 children vaccinated from twelve to twenty-four months previously, and thirty-four record cards of children vaccinated more than six months previously were received

Of the twenty-three children vaccinated more than two years previously, sixteen have been supervised regularly from a medical point of view Of these sixteen, ten brought up with patients whose sputum contained tubercle bacilli are in good health, one brought up with a tuberculous person not presenting tubercle bacilli in his sputum is in good health, three brought up with healthy persons are in good health, and two brought up in an environment of patients whose sputum did not contain tubercle bacilli have died (one from pertussis, and the other from acute bronchitis)

Of the 115 children vaccinated within one to two years, medical information was lacking with regard to sixty-two Fifty-three, however, were supervised regularly by physicians Twenty-two brought up in contact with tuberculous persons with sputum positive for tubercle bacilli are in good health, twelve brought up in contact with tuberculous persons not presenting tubercle bacilli in their sputum are in good health, eleven brought up in contact with healthy persons are in good health five brought up in the environment of tuberculous persons wih negative sputum have died (two from gastro-enteritis, one from convulsions one from acute bronchitis, one from diphtheria), two brought up in the environment of persons presenting tubercle bacilli in their sputum have died (one from enteritis, one after pertussis and bronchopneumonia terminating in convulsions and meningitis, presumably tuberculous)

Of the thirty-four children vaccinated from six to twelve months previously, twenty brought up in contact with tuberculous persons whose sputum was positive for tubercle bacilli are in good health, one brought up in contact with a tuberculous person with negative sputum is in good health, twelve brought up in contact with healthy persons are in good health, one brought up in contact with healthy persons has died from convulsions The vaccine was well tolerated by all subjects to whom it was administered

To summarize Of the children vaccinated, 9 7 per cent have died of diseases other than tuberculosis, while only 0 9 per cent have died of diseases presumably tuberculous

The results secured in Belgium with the B C G vaccine, distributed by the bacteriologic institute of Liege since Aug 1, 1924, are very encouraging and in every respect comparable with the results obtained in France with the vaccine prepared by the Service de tuberculose of the Pasteur Institute in Paris

Five Hundredth Anniversary of the University of Louvain

Ceremonies in commemoration of the fifth anniversary of the foundation of the University of Louvain were held recently in that city The dedication of the restored university halls and of the university psychiatric clinic took place the second day of the ceremonies The psychiatric institute can accommodate 800 patients In the surrounding park comprising 87 acres, nine detached buildings have been erected to house as many different categories of the insane

The Pasteur Institute at Stanleyville

Belgium commemorates this year the fiftieth anniversary of the first expedition of Stanley to the Congo, the point of departure of its colonial policy, which resulted in the annexation of the colony to the mother country In honor of the occasion, the provincial council of Brabant has voted an appropriation for the creation at Stanleyville of a Pasteur institute for the special purpose of furthering the campaign against tropical diseases

BERLIN

(From Our Regular Correspondent)

Jan 7, 1928

The Value of Protective Inoculation Against Diphtheria

During recent decades, Germany has not suffered to an inordinate extent from diphtheria The extent to which spontaneous retrogression of morbidity and timely administration of diphtheria antitoxin each may be responsible is an open question An inquiry was instituted by Prof J Schwalbe on the incidence of diphtheria and was published in the *Deutsche medizinische Wochenschrift,* of which he is the editor This brought forth the information that diphtheria in many sections has retrogressed to such an extent that it is sometimes difficult to secure sufficient instruction material for students Only in a few places does the opposite condition prevail, more particularly, in Berlin Still, the local increase of diphtheria in a few places has directed attention to active immunization against the disease, and the Prussian Landesgesundheitsrat (council on health), at a meeting held in November, recommended widespread prophylactic inoculation It confers, in a vast majority of cases, immunity against diphtheria for a considerable period The basis for such a demand may be found in the observations on New York school children published by the American physicians Park and Zingher The resolution of the Landesgesundheitsrat states further 'Vaccination against diphtheria, which is harmless if government-tested vaccines are employed and the proper technic is followed should be carried out at the end of the first year of life Compulsory vaccination, applicable to all the children of Prussia, does not, for various reasons, appear practicable Voluntary protection should, however, be applied as generally as possible Especially the children in institutions (kindergartens, care-taking institutions orphans' homes), including the attending personnel, furthermore, the school children in the cities and rural districts having a high incidence of diphtheria should receive such inoculation'

Following this resolution Professor Schwalbe instituted a further inquiry among the directors of the university children s clinics as to the observations that they have made on the results of protective inoculation against diphtheria The request was that those who had been in a position to collect evidence should report their personal observations as to the duration of the protection afforded by the vaccine The results of this inquiry Professor Schwalbe communicates in detail in number 2 of the *Deutsche medizinische Wochenschrift* Of the replies of the professors reported the following is cited from that of the pediatrician Finkelstein director of the municipal children s hospital in Berlin "No subsequent control examinations were made (or at least, not announced) of the first children who, in 1913-1914 (at the instance of Behring in Germany), were inoculated with a protective vaccine against diphtheria The longest observations, together with repeated regular testing of the existing immunity, have been reported by Park and Zingher of New York The protective inoculations were carried out in 1914 (or thereabouts), and the results were tested at intervals of one or two years The last report I have seen was for the year 1925, and was to the effect that the immunity still persisted almost unchanged and that the observations on the various subjects concerned were very uniform The duration of the immunity afforded by protective inoculation has thus been demonstrated up to at least ten to eleven years, a still longer immunity is at least highly probable

"Concerning the effects, or the attainable protection of inoculation in the face of natural infection with diphtheria, I am unable to express any opinion, since no statistical bases that would support a definite judgment have, to my knowledge, been published It is, furthermore, not yet proved that the 'immunity' produced by the protective inoculation, evidence for which is based on the negative outcome of the Schick test, is in reality synonymous with an increase of immunity, or resistance, to the natural infection.

"Nevertheless the question as to whether Germany should adopt the protective inoculation that is very generally employed in the United States and many other countries I would answer in the affirmative. However, it should not be forgotten that the protection does not develop until after an interval of from two to four months."

The joint reply from Professor Czerny, the director of the Berlin university children's clinic, and his collaborator Professor Opitz is likewise of interest: "It is established that depending on the preparation employed, a production of antibodies can be effected in 60, 80, 95 and, according to some statements, as high as 100 per cent of the subjects inoculated. The beginning of the antibody production depends likewise on the method employed. On the basis of observations made during epidemics in institutions, more particularly, it may be assumed that an antitoxin content, such as is established in an effective immunization, furnishes a certain amount of protection against an infection but it does not constitute perfect immunity, for cases of diphtherial infection have been observed (though comparatively seldom) in subjects in whom active immunization has been successful, which is in accord with earlier observations to the effect that even a large amount of antitoxin does not protect against infection. Humoral immunity must not, therefore, without further inquiry, be assumed to be identical with cellular immunity.

"Exact statements with regard to the duration of immunity attained by active immunization can be made only under especially favorable circumstances. Since with increasing age a natural immunity to diphtheria is developed, the later examination furnishes only relative evidence for the duration of the effect. Thus, if immunized young children when examined farther on during the school period are found to possess antibodies, these may have developed from the artificial inoculation or from a spontaneous active immunization. However, from what we know about active immunization, one can count on an immunity extending over several years.

"We are opposed to a general, and still more to compulsory, immunization. We hold rather that its application should be governed by the special local conditions."

The personal experiences of Professor Degkwitz, the director of the Greifswald children's clinic, are likewise worthy of study: "On the basis of the American articles that have appeared in the literature, together with my series of experiments in Munich, three years ago, at which time I vaccinated about 3,000 children in a few weeks, and, lastly, supported by my personal inquiries of various public health services in the United States, which I made in person during my seven months sojourn in different sections of the country, the Landesgesundheitsrat decided to recommend active protective inoculation against diphtheria and to promote its introduction in Germany.

"According to American observations, many hundred thousand persons have remained immune for ten years, and it is to be expected that they will remain immune as long as they live. We have an analogy here in Germany. In this country, where there are no cases of smallpox, a single vaccination at the end of the first year does not suffice to produce a long period of immunity to smallpox. We must be revaccinated. But if a person is vaccinated but once against smallpox and lives in a country in which there are genuine cases of smallpox, he does not need to be revaccinated, for the reason that the smallpox patients in his environment, through their infectivity, take care of revaccination in a natural manner.

"Now, from the standpoint of diphtheria, Germany constitutes an endemic region, with a large number of bacillus carriers. For that reason, those who have received active prophylactic inoculations will naturally be infected again and again—that is to say, revaccinated. Therefore active protective inoculation against diphtheria in an endemic region will confer as enduring protection as a single vaccination against smallpox in an endemic smallpox area.

"I think, as you do, that the results of compulsory vaccination would be entirely unsatisfactory. Three years ago in an article in the *Münchener medizinische Wochenschrift* and two years ago in the Reichsgesundheitsrat (federal council on health) I opposed such innovation when Schlossmann favored making vaccination compulsory in institutions alone. In my opinion, just as much can be accomplished by means of education and skilfully conducted publicity campaigns as by compulsory legislation. Evidence for this conception can be derived from those countries in which the citizens, quite different from here, are trained to become independent individuals and to reject all forms of compulsion."

The highly critical response of Professor Birk, director of the Tübingen children's clinic, is likewise presented: "In 1925 the Landesgesundheitsrat of Württemberg, at the instance of the ministry of the interior, debated the question of active immunization of children against diphtheria. It fell to my lot to open the discussion, and I presented the view that, considering the favorable American experiences, we could scarcely refuse to fall in line and to collect observations on the method, although I did not think that the method was sufficiently developed as yet for introduction into general practice. Since that time various independent institutions throughout the country have applied to children active immunization against diphtheria. But owing to the shortness of the time, only the figures of my own clinic (from 1924 on) and of the home for infants connected therewith are available.

"I am not in a position to give any information on the practical results of active immunization—that is to say, on the degree of protection against infection and illness afforded those immunized.

"In regard to the Schick test and its relation to immunization and the chances of contracting later diphtheria, it may be well to mention that the statistics on the frequency of the Schick reaction among our population have furnished results essentially different from the American statistics usually cited, as may be seen from the adjoining tabulation. The marked increase during the period from the second year of life to the beginning of school, as brought out by the American statistics, is entirely lacking in our statistics.

	American Statistics Percentage	Our Own Statistics Percentage
1– 3 months	15	21.5
3– 6 months	30	44
6–12 months	56–91	42
1– 3 years	83	43.4
4– 6 years	53	45
7–10 years	36	41
11–14 years	22	29

"With reference to the effects of immunization on the results of the Schick test, let me state that the Schick test was first applied to all the children; then they were immunized twice, and after an interval of several months they were again subjected to the Schick test. Unfortunately, it has been found difficult to have the children brought in for subsequent control examinations. However, I possess observations made subsequently on twenty-seven children, some of whom were immunized in 1924 or 1925.

"At first—that is to say, during the Schick tests given a few months after immunization—no essential changes in the numerical proportions could be noted To be sure, a few children who had reacted positively reacted then negatively, but others who had been negative had become positive Not until a year had elapsed since the immunization could successful results — viewing the situation numerically — be observed Then the number of children who gave positive reactions had been reduced by one half At the end of the second year, the Schick test was applied again, with the result that the proportion of positive and negative reactions had been maintained at the level of the previous year Immunization had therefore been successful but it was not a complete success for it had not proved possible to render all the children negative Then, too, in some of the children there was a fluctuation in the results of tests if a child had reacted negatively once, there was no definite assurance that it would continue to react negatively It would happen that a child which, in 1925, in spite of immunization had still reacted positively would in 1926, react negatively and, in 1927, would react positively again or that a child which, in 1925 and 1926, reacted negatively would, in 1927, become positive There are periods in which the children lack the protective substances although they may have them at other times Some children always reacted positively Whether these manifestations are due to peculiar qualities of the person in question, or whether the usual two immunizing injections are not sufficient to render the Schick test negative though with double doses it can be accomplished are still matters of controversy

But it must not be assumed that a negative Schick test constitutes a guarantee that the person immunized will not contract diphtheria

'A child was brought to our clinic who appeared to present nasal diphtheria As there was no danger, the injection of serum was postponed and the Schick test was applied first The result was negative Nevertheless the child had diphtheria as was confirmed by the bacteriologic examination

'On the other hand a positive reaction does not signify, by any means that the subject is especially liable to contract diphtheria The nurse in the diphtheria ward of my clinic has always reacted positively to repeated Schick tests, but she has never come down with diphtheria although for years children with diphtheria coughed in her face almost daily

"In this connection, it is deserving of mention that formerly we endeavored to immunize all our teaching nurses against diphtheria We were however, compelled to give up the practice for the reason that the reactions to the injections in these adult persons were much too severe

In my opinion, the time is not ripe for the introduction of active immunization against diphtheria into general practice It involves—as is the case with the Schick test—still too many uncertainties The American researches are, to be sure, very convincing in view of the large number of subjects immunized, but they must first be supplemented and confirmed by carefully observed individual cases '

Marriages

Frederick Cook Warnshuis, Grand Rapids, Mich, to Miss Hellen Todt of Kenosha, Wis February 7

William H Murphy, Redwood City, Calif, to Dr Jewel A Booth of San Francisco, January 23

Clarence S Summers to Miss Minnie May Sweets, both of Tulsa, Okla, Dec 25, 1927

John P J Shore, Sailor Springs, Ill, to Miss Pauline Evans of Clay City, recently

William Sidney Brown to Miss Jewell Taylor, both of St Louis, January 1

Deaths

Karl Konrad Koessler ⊕ Chicago, University of Vienna, Austria, 1905, associate clinical professor of medicine, Rush Medical College and professor of experimental medicine, University of Chicago, member of the Otho S A Sprague Memorial Institute, the American Society for Clinical Investigation, the American Association of Pathologists and Bacteriologists, the American Society for Experimental Pathology, the American Association of Biological Chemists, and the Society of American Bacteriologists, past president of the Chicago Pathological Society, the Chicago Society of Internal Medicine and the American Society for the Study of Allergy, on the staffs of the Cook County Hospital and St Luke's Hospital, conducted research on scarlet fever and other diseases and more recently on the treatment of pernicious anemia by means of special diet, aged 48, died, February 13, of chronic nephritis and heart disease

George Reese Satterlee ⊕ New York, Columbia University College of Physicians and Surgeons, New York 1898 member of the American Gastro-Enterological Association, president of the American Stomatological Association, formerly instructor in histology, embryology and medicine, University and Bellevue Hospital Medical College, attending physician to the Fordham Hospital, New York, and consulting physician to the New Jersey State Hospital Trenton, at various times on the staffs of the Washington Heights St Vincent's, Gouverneur, Midtown, Bellevue, Roosevelt and Presbyterian hospitals New York, served during the World War author of Outlines of Human Embryology,' and numerous articles on gastro-intestinal disorders, aged 54 died, February 8, of angina pectoris

Clarence Wilson East ⊕ Springfield, Ill Northwestern University Medical School, Chicago, 1904, chief of the division of child hygiene and public health nursing of the Illinois State Department of Public Health, 1918-1923, medical director of the Society for Crippled Children of Illinois medical superintendent of St John's Sanitarium, aged 58, died, January 28, at Irvington, Ala, of cardiorenal disease

George De Bruce Johnson, Oxford, N Y Medical Department of the University of the City of New York, 1885, member of the Medical Society of the State of New York, past president of the Chenango County Medical Society aged 65 died, January 13, at the Muhlenberg Hospital, Plainfield of shock following a gastro enterostomy for ulcer of the duodenum

Wilbur Everett Postle, London Ohio, Eclectic Medical Institute, Cincinnati, 1890, formerly professor of nervous and mental diseases at his alma mater, at one time superintendent of the Shepard (Ohio) Hospital, aged 67, died, January 24, of arteriosclerosis and myocarditis

Charles Jenkins Montgomery, Augusta Ga, University of Pennsylvania School of Medicine, Philadelphia 1892 member of the Medical Association of Georgia, formerly professor of medical jurisprudence and hygiene, University of Georgia Medical Department, at one time county physician, aged 59 died, January 14, of heart disease

Charles Erastus Darrow ⊕ Rochester, N Y, Medical Department of Columbia College, New York, 1881 member of the American College of Physicians, consulting physician to the Rochester General Hospital, aged 72, died, January 2, of angina pectoris and endocarditis

Dabney Berrey, San Antonio, Texas, University of Alabama School of Medicine, Tuscaloosa, 1881, member of the State Medical Association of Texas, past president of the Bexar County Medical Society, aged 66, died, Nov 1 1927, of angina pectoris

Henry Clay Lacy ⊕ New Brighton, Pa, Jefferson Medical College of Philadelphia 1908, formerly on the staffs of the Beaver Valley General Hospital, New Brighton and the Providence Hospital, Beaver Falls, aged 52, died, January 1, of bronchial asthma

Frank Dalmon Stafford, North Adams, Mass University of Vermont College of Medicine, Burlington, 1878, formerly mayor of North Adams president of the staff of the North Adams Hospital, aged 71, died, January 21, of acute dilatation of the heart

Michael F Dockery ⊕ Iron Mountain, Mich, Rush Medical College, Chicago, 1891 on the staff of the Iron Mountain General Hospital, aged 67, died in January, at the Presbyterian Hospital, Chicago, of cerebral embolism and mesenteric thrombosis

Lawson M Johnson, Yatesville, Ga, University of Georgia Medical Department, Augusta, 1883, member of the Medical Association of Georgia, formerly president of the Yatesville Board of Health, aged 77, died, January 11, of diabetes mellitus

Lorenzo D Stewart, Perry, Okla, University of Louisville (Ky) School of Medicine, 1907, member of the Oklahoma State Medical Association, aged 51, died suddenly, January 14, at a hospital in Enid, of heart disease

Yves Remi Le Monnier, New Orleans Medical Department University of Louisiana, New Orleans, 1868 Civil War veteran, for many years parish coroner aged 84, died, January 14, of arteriosclerosis and angina pectoris

Michael O'Brien Ward, Montreal Que, Canada, McGill University Faculty of Medicine, Montreal, 1875, for twenty one years statistician of the city department of health, formerly a druggist, aged 75, died, Dec 27, 1927

Charles Augustine Phillips, Brooklyn, Long Island College Hospital, Brooklyn, 1896, medical examiner for the board of education, visiting physician to St Peter's Hospital, aged 54, died January 26 of carcinoma of the lung

William Bascom Bissell, Lakeville, Conn, Columbia University College of Physicians and Surgeons, New York, 1891 member of the Connecticut State Medical Society, aged 62, died, Dec 30, 1927, of hypernephroma

Charles Elmer Stagner, Tracy, Calif Cooper Medical College, San Francisco, 1912, member of the California Medical Association aged 44, died, January 28, at the Dameron Hospital, Stockton, of pneumonia

William Uberto Taylor, Mooers, N Y, University of Vermont College of Medicine, Burlington, 1880, member of the Medical Society of the State of New York, aged 75 died, January 13, of angina pectoris

Margaret Teigen, Everett, Wash University of Illinois College of Medicine Chicago, 1904, aged 57 died, January 10, at the General Hospital, of injuries received when struck by an automobile

Richard Henry Rush ⊕ Gorman, Texas, Memphis (Tenn) Hospital Medical College, 1893, formerly on the staff of the Blackwell Sanitarium, aged 75, died suddenly, January 23, of heart disease

Boyle Vance, Chicago, University of Michigan Homeopathic Medical School, Ann Arbor, 1889, aged 61, was accidentally shot and killed, February 5, at his home in Homewood, while cleaning a gun

John Cole, Williamsfield, Ill, College of Physicians and Surgeons, Keokuk Iowa, 1882, Civil War veteran, formerly a druggist, at one time postmaster of Elmore, aged 80 died, Dec 22, 1927

Vernon W Stiles, Sparta, Wis, Hahnemann Medical College and Hospital, Chicago, 1888, formerly on the staff of St Mary s Hospital, aged 66, died, January 16, of cerebral hemorrhage

Guy Fairfax Whiting, Washington, D C University of Maryland School of Medicine, Baltimore 1878, aged 71, died Dec 30, 1927, of nephritis, myocarditis and diabetes mellitus

Jesse M Stukey, Lancaster, Ohio, Kentucky School of Medicine, Louisville, 1889, member of the Ohio State Medical Association, aged 66, died, January 11, following a long illness

Paul Peed Rockwood ⊕ Baltimore State University of Iowa College of Medicine, Iowa City, 1921, member of the American Society of Clinical Pathologists, aged 30, died, Dec 28, 1927

Arthur Lee Tumbleson ⊕ Baltimore, Baltimore Medical College, 1901, on the staff of the Mercy Hospital, aged 60, died, January 28, of chronic myocarditis and cerebral sclerosis

Charles Burton Gay, Syracuse, N Y, University of Buffalo School of Medicine, 1893, aged 61, died, January 13, at his home in Warners of diabetes mellitus and acute nephritis

John Hunton Baker, Piqua, Ohio, Starling Medical College Columbus, 1895, member of the Ohio State Medical Association aged 59, died, in January, of heart disease

Wayne Anthony Whitt, St Louis, St Louis University School of Medicine, 1904, aged 47 died, Dec 24, 1927, at the City Hospital following an operation for carcinoma

James Branyan Hall, Mansfield, Ohio, Hahnemann Medical College and Hospital of Philadelphia, 1871, aged 80, died, January 22, of chronic valvular heart disease

Morton E Hundley ⊕ Martinsville, Va, University College of Medicine, Richmond, 1899 aged 52, died, January 2, at Saint Moritz Switzerland of pneumonia

Charles Olin Files, Cape Cottage, Maine, Medical Department of Columbia College, New York, 1870, aged 80 died Dec 25 1927, at Portland, of angina pectoris

Daniel Dixie Hollis, Sulligent, Ala (licensed, Alabama, 1884), formerly city and county health officer, aged 67, died, Dec 9, 1927 of chronic heart disease

Walter Byron Jameson ⊕ Augusta, Ga, University of Georgia Medical Department Augusta, 1924, aged 34 died January 10 of agranulocytic angina

Joseph Sheafe, Kansas City Mo State University of Iowa College of Medicine, Iowa City 1892 aged 61 died January 16 of nephrolithiasis and uremia

Homer John Clarke Reed, Ralston Iowa, College of Physicians and Surgeons Keokuk 1875, also a druggist, aged 74 died Dec 16, 1927, of heart disease

Robert Morris Tudor, Philadelphia, Hahnemann Medical College and Hospital of Philadelphia 1893 aged 92 died, January 13, of hypostatic pneumonia

Hugh F Waters ⊕ Nekoosa Wis, Detroit College of Medicine and Surgery 1903 aged 52 was found drowned in the Wisconsin River January 13

Joseph Myron Stone, Ann Arbor, Mich Albany Medical College, 1883, aged 67, died January 14, of acute dilatation of the heart and arteriosclerosis

William D Boyd, Waxahachie Texas Missouri Medical College St Louis, 1882 aged 70, died Oct 31 1927 following a fall from his office window

Mosby Clayton Weaver, Batesville, Ark, Louisville (Ky) Medical College 1877, aged 72 died January 16, as the result of a cerebral hemorrhage

Charles David Forney, Wichita Kan, St Louis College of Physicians and Surgeons 1902 aged 50 died, January 17 at Wilmore, of heart disease

Robert R Arnold, Humeston Iowa, State University of Iowa College of Medicine, Iowa City 1877 aged 80 died, Oct 2, 1927, of angina pectoris

Charles M Hawley ⊕ Painesville, Ohio, Eclectic Medical College of Pennsylvania Philadelphia 1871 aged 78 died January 23 of endocarditis

Karl Alfred Helgeson, Newark N J Columbia University College of Physicians and Surgeons 1903, aged 48 died January 28 of heart disease

Samuel Levine, Union, N J Eclectic Medical College Cincinnati, 1925, aged 29, died, January 9 of chronic nephritis and heart disease

Eutaw D Neighbors, Lewistown, Md College of Physicians and Surgeons, Baltimore, 1882, about 69, died January 12, of heart disease

John B Armstrong, Gardner Kan College of Physicians and Surgeons, Keokuk Iowa 1868, aged 84, died, Sept 25 1927, of angina pectoris

Richard L Goodman, New Albany, Miss (licensed Mississippi, 1886) aged 70, died, in December, 1927 as the result of cerebral hemorrhage

Adelbert W Truman, Rochester N Y Eclectic Medical College of Pennsylvania, Philadelphia, 1870 aged 81 died Oct 3, 1927, of senility

Ferdinand Wilsey Merrill, Winn, Maine, Medical School of Maine, Portland 1872 aged 85, died Nov 28 1927 of cerebral hemorrhage

James Purcell Geppert, Cincinnati Pulte Medical College Cincinnati, 1877, aged 77, died, January 17 of cerebral hemorrhage

William Leslie Gray, Pembroke, Ont, Canada McGill University Faculty of Medicine, Montreal, Que, 1881 died, Nov 6 1927

Joseph Fleming Stewart, Griffin, Ga, Atlanta Medical College, 1891, aged 57, died, January 10, of heart disease

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CORRECTION

Dr Frank Woodruff Chapin is Not Dead—The report of the death of Dr Frank Woodruff Chapin, New York, in THE JOURNAL, February 4, was an error A Dr F W Chapin who graduated from the same school in the same year and of whom these headquarters has had no information since graduation, is reported to have died in Italy

Bureau of Investigation

MORE MISBRANDED NOSTRUMS

Abstracts of Notices of Judgment Issued by the Food, Drug and Insecticide Administration of the United States Department of Agriculture

Depurativo Cacique—In March, 1927, the United States Attorney for the District of Porto Rico filed a libel praying seizure and condemnation of a number of bottles of 'Depurativo Cacique,' at Camuy, Porto Rico alleging that the product was being offered for sale in the Territory of Porto Rico and that it was misbranded in violation of the Food and Drugs Act When analyzed by the federal chemists, the stuff was found to consist essentially of mercuric chloride, potassium chloride, sodium sulphate, alcohol and water with sarsaparilla flavoring It was sold as a remedy for syphilis, skin affections, chronic rheumatism, herpes and various other conditions In April, 1927 Francisco de Jesus of Camuy, Porto Rico, appeared and admitted the allegations of the libel Judgment of condemnation and forfeiture was entered, and the court ordered that the product be released to the claimant, upon payment of the cost of the proceedings and the execution of a bond, conditioned that the stuff be not sold or disposed of contrary to law—*(Notice of Judgment 15063, issued December 1927)*

Protecto Spray—The Salol Chemical Company of Chicago shipped in February, 1927, to Los Angeles, California, a quantity of 'Protecto Spray' that the authorities held was misbranded When analyzed it was found to consist of a solution in glycerine of carbolic acid, salicylic acid, boric acid and a trace of volatile oil It was sold under the claim that it was a remedy for the treatment and prevention of female diseases, leucorrhea "and as a Preventative' In April, 1927 the court adjudged the product misbranded and ordered that it be destroyed—*(Notice of Judgment 15066, issued December 1927)*

Reno's New Health Uterine Tonic—In February, 1926, S B Leonardi and Company of New York City are alleged to have shipped to San Juan, Porto Rico, a quantity of "Reno s New Health Uterine Tonic' that the federal authorities charged was misbranded Analysis showed the article to contain extracts of vegetable material, including berberine, alcohol and water The therapeutic claims made for the preparation were false and fraudulent, and in May, 1927 S B Leonardi and Company Inc appeared as claimant for the property and admitted the material allegations of the libel The court entered judgment of condemnation and forfeiture, and ordered that the product be released to the claimant, upon payment of the costs of the proceedings and the execution of a bond, conditioned that the stuff should not be sold or otherwise disposed of without first having been properly labeled—*(Notice of Judgment 15071, issued December, 1927)*

Kentos—In February, 1927, the Kentos Laboratories, Inc, shipped from Los Angeles California, to Chicago Illinois, a quantity of 'Kentos,' which the federal officials held was misbranded Analysis showed the article to consist essentially of zinc sulphate, common salt and water, with traces of potassium chlorate and volatile oils It was sold under the claim that it was a remedy for pyorrhea, canker sores, cold sores, and to have among its active ingredients, potassium permanganate copper sulphate and sodium borate The federal chemists reported that it did not contain compounds of copper manganese nor boron and they reported, further that undiluted, it failed to kill a culture of *M aureus* at body temperature in five minutes In June 1927 judgment of condemnation and forfeiture was entered, and the court ordered that the product be destroyed—*(Notice of Judgment 15074, issued December 1927)*

Vernas Lotion—The Vernas Chemical Company of Brooklyn New York shipped in November, 1926, a quantity of 'Vernas Lotion which the federal authorities charged was misbranded When analyzed the preparation was found to consist essentially of zinc chloride (0 4 per cent), cassia oil glycerine alcohol and water, colored green Undiluted, it failed to kill a culture of *M aureus* at 40° C It also failed to kill a culture of *B typhosus* at 17° C It was sold under the claim that it was a prophylactic for surgical dental or household employment, especially serviceable in inflammatory infections of the mouth nose and throat, and also for burns, wounds and abrasions The claims regarding the curative and therapeutic effects were declared false and fraudulent and in July, 1927, judgment of condemnation and forfeiture was entered, and the court ordered that the product be destroyed—*(Notice of Judgment 15075, issued December, 1927)*

Sanagono—In December, 1926, the United States Attorney for the District of Porto Rico filed a libel praying for the seizure and condemnation of a number of bottles of a preparation known as 'Sanagono" that were at Santurce, P R The government officials charged that the article was sold in Porto Rico by the Liaju Company of Santurce, and declared that the preparation was misbranded in violation of the Food and Drugs Act When analyzed by the Bureau of Chemistry, Sanagono was found to be a solution of alum, zinc sulphate and carbolic acid It was sold for injection purposes, under the claim that it would cure gonorrhea These claims were declared false and fraudulent, and in January, 1927, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed—*(Notice of Judgment 14948, issued June 1927)*

White Diarrhea Remedy—The Barnes Emulsion Company of Gardena, California, shipped to Massachusetts in March 1927, a quantity of "White Diarrhea Remedy,' which the federal officials declared was misbranded When analyzed by the Bureau of Chemistry, the preparation was found to be a solution of iron (ferrous) sulphate in water, the solution containing a little over 9 per cent of the iron salt Bacteriologic examination showed that the product was neither antiseptic nor germicidal The claim was made that this preparation was highly antiseptic and germicidal, which claims were declared false and fraudulent In April, 1927, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed—*(Notice of Judgment 14970, issued June, 1927)*

Sannette—The Sannette Chemical Company, Cincinnati, Ohio, shipped in November, 1926, a quantity of 'Sannette which the federal authorities declared was misbranded The preparation was labeled in part

> The Chloride of Zinc Antiseptic Powder Healing Antiseptic
>
> Prepared especially for the vaginal douche Superior to Bichloride Permanganate of Potash or the Cresol compounds Indications—Leucorrhea gonorrhea vaginitis vulvitis metritis cervicitis Relieves any condition charactered by odor, inflammation or discharge

When analyzed by the Bureau of Chemistry Sannette was found to consist essentially of boric acid alum and zinc salts with a small amount of methyl salicylate, phenol and menthol As the preparation contained no ingredients, or combination of ingredients, capable of producing the curative and therapeutic effects claimed the claims were declared false and fraudulent, and in January 1927, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed—*(Notice of Judgment 14860 issued June 1927)*

Medicine as a Science—Medicine occupies a peculiar position among the sciences By workers in other fields of science, medicine has been looked on askance even disregarded In most of the classifications of science it is not even mentioned It is even claimed that there is no such thing as a science of medicine On the one hand, as medicine it has been scorned and neglected, and on the other, as the medical sciences, it has been honored and respected and held to embrace within its borders such important divisions of science as anatomy and physiology—Cole, Rufus *Science* **67** 51 (Jan 20) 1928

Correspondence

IRRADIATION OF CHILDREN PRIOR TO SURGICAL OPERATION

To the Editor —Under Queries and Minor Notes (The Journal, January 7) you state that you do not know of any hospital that irradiates all children prior to operation

It is a rule of the Boston City Hospital that no patient under 16 years of age be anesthetized until a roentgenogram of the chest has been made to rule out (or in) an enlarged thymus If a large thymus is found (which occurs in about 3 per cent) none except emergency operations are performed until the thymus has been irradiated and shrunken to its normal size for the age of that particular patient This usually requires from three to six exposures

I am not stating these facts for the hospital, but as a recent house officer I know the procedure

As a nose and throat man I believe that in the vast majority of cases bleeding following tonsillectomy is due to injury to the pillars or pharyngeal wall or to an abnormally large tonsillar artery or vein I never do a coagulation time test or a bleeding time, nor is one done at the Boston City Hospital P G Berman, M D, Lowell Mass

THE PENETRATION OF ULTRAVIOLET RAYS INTO ANIMAL TISSUE

To the Editor —In a recent paper (The Journal, January 21) Macht, Anderson and Bell publish results of measurements which may lead to a false conception concerning the penetration of ultraviolet rays through animal tissues Two methods are used for the determination of the transmitted radiation, a photographic method with use of a spectograph and a thermopile with use of a monochromator Although the correctness of the photographic observation cannot be doubted, it seems advisable to estimate the percentage of the radiation transmitted which caused the ultraviolet spectral lines to appear on the plate The exposures were made by air-cooled and water-cooled mercury arcs at very short distances (from 5 to 8 cm and 20 cm, respectively) with a very wide slit (about 1 mm) The time of exposure varied from one-half to five minutes and was from five to ten seconds in two cases (cat, 0 9 mm , rabbit, 1 mm) With the slit directly illuminated by the lamp an exposure of about one-fifth to one twentieth second should produce these lines with a similar average density as the weakest lines in the absorption spectrums This assumption is also substantiated by figure 3 *A*, which shows the weak lines below 2 480 angstrom units with an exposure of one second By comparing the respective exposure times and assuming a Schwarzschild factor of about 0 76, one will find that the transmitted shortest rays represent about 1 per cent of the incident radiation, the transmission of shorter rays, not blackening the film amounts to less than 0 1 per cent These figures are somewhat larger than those of Hasselbalch and correspond quite well with those that I have obtained in recent work (conducted with J Kunz of the Physics Department, University of Illinois, and to be published shortly in the *Archives of Physical Therapy, X-Ray, Radium*) Toward the visible part and in the visible spectrum the penetration is of course very much greater

The observations of Macht, Anderson and Bell with thermopile and monochromator give results which differ entirely from the ones obtained on living tissue by the first method, in two directions First the penetration of the ultraviolet is much greater, namely, between 11 4 and 56 3 per cent, for 1 175 mm albino rabbit skin, and, second, the penetration increases toward 2,800 and again toward 2,537 angstrom units while the first observations never show any penetration below 2 800 These observations are also in strongest contradiction to the older literature as well as to our newest measurements The explanation of the failure of the measurements of Macht and his co-workers lies in the fact that the thermopile registers the scattered light of the monochromator (1 prism, 5 lenses) much stronger than the very faint far ultraviolet lines (which carry a very minute energy) Unless every trace of scattered (ultraviolet visible infra-red) rays are eliminated by additional prisms lenses, slits, etc errors of such magnitude occur that make the results illusionary Even with most of the scattered light carefully removed a control measurement is necessary to establish the magnitude of the remaining error With the arrangement as given in the publication of Macht and his co-workers a window glass inserted in the beam before the thermopile would apparently transmit a magnitude of about 50 per cent at about 2,800 angstrom units although in reality it does not transmit any trace of light The authors admit 'that interposing a quartz plate or the living tissue did not materially alter the area of light on the pile or the distribution It is to be regretted that they did not interpose a glass plate as this would have detected the error As to the results, it is known that the absorption of proteins and consequently living tissue decreases slightly near 2,500 and 2,600 angstrom units before the end absorption sets in but the decrease from 3 700 to 2 800 angstrom units is absolutely out of the question

As a minor mistake I should like to correct the term "absorption bands of the mercury vapor' by the proper term 'emission lines,' before the improper term starts confusion

Albert Bachem Ph D, Chicago
Professor of Biophysics, University of Illinois
College of Medicine

ARGYRIA FROM HAIR DYES

To the Editor —The development of argyria from the use of hair dyes containing silver salts has been suggested as a possibility and therefore such compounds have not met with the approval of those who have investigated the harmful effects of cosmetic preparations Cole (The Dermatoses Due to Cosmetics The Journal Jan 14 1924 p 1904 Investigation of Injuries from Hair Dyes, Dyed Furs and Cosmetics ibid, Feb 5, 1927, p 397) and McCafferty (Hair Dyes and Their Toxic Effects *Arch Dermat & Syph* **14** 136 [Aug] 1926) are of the opinion that argyria may develop, but no definite instances are reported This of course is known to those who market such dyes and may be used as an excuse to exclude them from any possible legislation against those proved to be harmful by actual case reports

In the recent flurry for expert opinion (Expert Opinion on Hair Dyes—Take It or Leave It, Current Comment The Journal, Oct 29, 1927, p 1521) I was also prevailed on to look into the matter of toxic hair dyes and could not find any direct evidence of an actual case of argyria from the use of a silver-containing hair dye yet I could not concede that such a possibility was not in the offing and therefore gave a negative report

More recently I have come across an actual case report by Sainz de Aja (Cutaneous Argyria of Unusual Origin, *Actas dermato-sifilog* **16** 148, 1924) His patient was a woman with gray hair, who after using a hair dye containing silver nitrate (percentage not given) for several months, developed dark spots on the face, cheeks, sides of the neck, occiput and forearms There was less pigmentation on the scalp than on the face and neck Although he was unable to find a similar case in the literature, he strongly advises against the use of such hair dyes, as the resulting pigmentation is permanent

In view of this case report and possibly others that may come to light after still further investigation, I think it advisable not to recommend such hair dyes, as they are potentially dangerous My attention has been called to the February issue of *Good Housekeeping* in which another case of argyria from a silver-containing hair dye is reported by a physician writing for this magazine—an unusual case in an unusual place to report it

E W Abramowitz, M D, New York

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed Every letter must contain the writer s name and address but these will be omitted on request

TREATMENT OF PRURITUS ANI

To the Editor —Please send to me information relative to the treatment of pruritus ani A patient who has had frequent roentgen ray treatments cannot take any more on account of the skin reaction Information concerning ethyl chloride treatment will be appreciated

John Richard Porter M D, Lebanon Ind

Answer—The treatment of pruritus ani depends on a careful study of the individual case in a search for the etiologic factor Any constitutional disorder, such as diabetes, constipation or pelvic disease should be corrected and the diet regulated Local treatment will give relief in many cases MacKee has found roentgen rays a valuable agent in 210 cases of pruritus of the anus and vulva, but states that recurrences are common He admits that the cause could not be ascertained in any of these cases In many cases of apparently neurotic origin, relief will be secured by hot water applications followed by 33 per cent calomel dusting powder Carbon tetrachloride (carbonei tetrachloridum, U S P) is recommended by Alderson (*California & West Med* **26** 51 [Jan] 1927) as a cleansing as well as a remedial agent, either pure or with 0 5 per cent phenol (carbolic acid) added Some authors are enthusiastic about the effect of vaccines made from *Streptococcus fecalis* Fissures when present, should be treated with compound tincture of benzoin or pure phenol If there is an epidermophyton of the perianal skin, mercurochrome-220 soluble may be used or crude coal tar ointment No information on the use of ethyl chloride in pruritus ani is available

TREATMENT OF OZENA

To the Editor —In The Journal November 5 page 1643 you mention diphtheria anatoxin as a successful treatment for ozena Does anatoxin mean the same as toxin antitoxin such for example as is distributed free by the Ontario Board of Health for the permanent prevention of diphtheria? If not could I probably procure the anatoxin from such a firm as Parke Davis & Co ? I am 65 years of age and have had ozena all my life The systolic pressure has been 160 for six years from 180 to 200 every day (p m) for the last nine months though the diastolic has not been higher than 100 except once (120) February 8 my left side was almost completely paralyzed (leg and arm) but I have entirely recovered except the great toe The heart is smaller than normal the kidneys are almost certainly healthy Would the ozena tend to raise systolic pressure? I think I remember seeing in The Journal about three years ago that the x ray would cure ozena Would it be worth trying? Would there be any danger of its doing any damage to sight brain etc ? I have tried liver extract the last few weeks without result I have also tried corpus luteum Thyroid extract (1 grain t i d) sent my pulse up The only thing that helps the ozena is irrigation with salt or sodium bicarbonate or applying glycerin and dextrose My weight was 164 in 1921 I cut it to 140 till February 27 now it ranges from 123 to 130 points Please omit name

M D Ontario

Answer—We may say that ozena is the foul odor that is often noted in cases of atrophic rhinitis, but not all cases of the latter have the foul odor The exact etiology has not been determined from the bacteriologic standpoint At one time the *Coccobacillus foetidus* of Perez was supposed to be the cause, but this has not been definitely proved A number of bacteria among them Abel's bacillus and the pseudodiptheria bacillus have been considered the etiologic factors, but, as previously stated there is no proof that any one of these or several of them are the cause Vaccines made from these various bacteria have been used, in the main with unsatisfactory results In view of the fact that the bacterial cause has not been found, it would be futile to use antitoxin or vaccine prepared from these bacteria The best treatment found for ozena has been that of a thorough cleansing of the nose either with solutions of hydrogen peroxide 1 part in 5 to 6 parts of water, or a mild alkaline solution containing sodium bicarbonate After removing the foul smelling crusts and secretion it is a good idea to massage the nose gently with weak compound solution of iodine containing oil or glycerin Then the introduction into the nose of liquid petrolatum or petrolatum acts as a sedative and protective to the nasal mucous membrane, when applied several times a day In other cases a 25 per cent solution of dextrose in glycerin used three or four times a day gives considerable relief Potassium iodide in doses of from 0 2 to 0 3 Gm three times a day, well diluted, often increases the secretion of the nose and thereby prevents the adhesion of crusts In latter years implantation of ivory into the septum and various other operations have been used to a certain extent in the effort to narrow the air space in the nose and thus prevent drying of the secretions

CAUSES OF WARTS

To the Editor —Some controversy has arisen regarding the origin of ordinary warts small cauliflower like growths which suddenly appear and disappear Their behavior seems epidemic to me I speak of this because at times this occurs in a school where there is a swimming pool which is *well cared for the water being changed often Could it be possible that* this is a coincidence or is it an infection?

J J Wood M D Cicero Ill

Answer—Evidence has been published which indicates that warts may be caused by infection with one of the filtrable viruses This does not occur by indirect means but by direct contact Picking or cutting the warts causes them to ooze, and the fluid infects other parts of the skin See the article by Wile and Kingery (The Journal, Sept 27, 1919)

TREATMENT OF PSORIASIS

To the Editor —What would be the best treatment for psoriasis in a woman aged 20 thin and high strung with a slightly enlarged neck who suffers from constipation and dysmenorrhea but is otherwise in good health? The lesions extend from the middle of the neck a strip 1 inch wide about an inch above the border of the hair line around and over the ear following the hair line to the center of the forehead A few small patches are scattered throughout the scalp The condition has existed *four years Please omit name*

M D Michigan

Answer—The treatment of psoriasis, irrespective of age sex duration or constitution, is unsatisfactory Lack of knowledge of the etiology of the disease precludes the possibility of permanent cure Local treatment is still the chief reliance An ointment of 10 per cent ammoniated mercury and 5 per cent salicylic acid in ointment of rose water is fairly effective for lesions on the scalp and adjacent regions Crude coal tar ointment may also be used but is objectionable on account of its color Any agent that stimulates the pigment supply of the skin will be beneficial This includes exposure to sunlight or ultraviolet radiation fractional roentgen-ray treatment and arsenic by mouth The roentgen ray, of course, should not be used on the scalp The action of arsenic is uncertain and must be watched Endocrine therapy offers a promising field for investigation, particularly the role of the thymus gland

FRONTAL SINUS DISEASE AND SARCOMA OF ORBIT—COLLOIDAL GOLD

To the Editor —1 Are there many cases on record of frontal sinus disease and sarcoma of the orbit in the same patient? In such a case could the infection be considered as the cause of the tumor growth? I did a modified Killian operation on a patient with exophthalmos and a history of nasal discharge and polypi, after intranasal methods failed to give relief The large frontal sinus was found full of pus Under the periosteum at the upper nasal angle of the orbit there was a mass about the size of a large bean The floor of the frontal sinus was perforated The first report on this mass was nonmalignant A later report from another laboratory was malignant sarcoma' Before operation the gland below the ear was swollen The patient thinks that the swelling has decreased in size 2 Is Dr Ochsner s collodaurum of any value in inoperable malignant disease?

H F Curtis M D Fort Scott Kan

Answer.—1 Occurrence of frontal sinus disease and sarcoma of the orbit *in the same patient is rather uncommon* It seems quite likely that sarcoma was first present and then a secondary infection occurred which resulted in the pathologic conditions reported

2 "Colloidal Gold" was developed by Professor Louis Kahlenberg and Dr Edward H Ochsner It is claimed that the remedy has proved far superior to the roentgen ray and

radium in the treatment of inoperable cases of cancer and also as a postoperative treatment As evidence for the claims, the manufacturer, Kahlenberg-Klaus Co, referred to a publication by Dr Ochsner The Council on Pharmacy and Chemistry examined this evidence and reported (The Journal, Jan 31, 1925, p 387) that until more critically studied cases supported by microscopic examination of the tissues, are reported in which there has been demonstrable retrogression or disappearance of the tumors, there is no reason for believing that "Colloidal Gold offers anything more in the treatment of carcinoma than do the other colloidal preparations that have preceded it

From the circular matter that is sent out for Collodaurum by the Kahlenberg Laboratories, Inc (successor to the Kahlenberg-Klaus Co), it appears that this is essentially the same as the product formerly marketed as 'Colloidal Gold'

Further observations on the use of "Colloidal Gold' in cancer were published by Dr Ochsner in 1926 (*Illinois M J* **50** 30 [July] 1926) These do not seem to permit a revision of the Council's estimate of the product On the contrary the new report strengthens the Council's decision A further publication by Dr Ochsner (*Internat J Med & Surg* **40** 100 [March] 1927) does not add anything essentially new Also a reference to the preparation which occurs in a report by Soiland, Costolow and Meland on the use of metallic colloids in the treatment of cancer (*Radiology* June, 1927, p 469) is not favorable to the product advocated by Dr Ochsner

DRUG TO PRODUCE BLEB

To the Editor—I should like to know a chemical which when applied to the skin, will produce a bleb with the least local reaction I am interested only in producing a bleb about the size of a pea My purpose is to remove scars and the source of information is a loop plastic surgeon who uses some chemical adjacent to the scar A blister forms painlessly and the skin grows across I was told that he uses a concentrated solution of mercuric chloride Will that blister?

M D Chicago

Answer—For the purpose of causing a slight dermatitis and exfoliation of the skin it is recommended to dab on the skin several times a day a 0 5 to 1 per cent solution of mercuric chloride Stronger solutions will undoubtedly blister Cantharides collodion, made by percolating 60 parts of cantharides with chloroform, evaporating the chloroform and dissolving the residue in 85 parts of flexible collodion will also answer the purpose The application for ten or twenty seconds of a pencil of carbon dioxide snow will cause a bulla, and this method is easily controllable

How much does this benefit the scar? Slightly, perhaps, by causing a temporary increase of circulation The claim that scars can be removed in this way is ridiculous The 'plastic surgeon' quoted possibly believes that any one easy enough to put up money in advance on such a claim can be easily convinced after the operation that the scar has been benefited, although not removed

SULPHARSPHENAMINE—UNILATERAL EXOPHTHALMOS AT BIRTH

To the Editor—1 How does sulpharsphenamine compare with neoarsphenamine and arsphenamine in toxicity and therapeutic potency? Are there any special contraindications to the use of sulpharsphenamine? Are there any advantages except the lack of local irritation when injected subcutaneously or intramuscularly in the use of sulpharsphenamine? 2 What are the possible causes of a unilateral exophthalmos noted at birth or a few days after? The labor was not difficult in this case Please omit name

M D Ohio

Answer—1 According to New and Nonofficial Remedies, 1927, the actions and uses of sulpharsphenamine are the same as those of neoarsphenamine, over which it is claimed to have the advantage of a higher chemotherapeutic index, more prolonged or delayed action, lower toxicity, a somewhat greater stability of solution in the presence of air, and of permitting subcutaneous injection An excellent report of the advantages and disadvantages of sulpharsphenamine in syphilis, as found by Kolmer, is given in his recent book 'Principles and Practice of Chemotherapy" (Philadelphia, W B Saunders Company, 1926) In summing up the discussion, Kolmer says The chief advantages of sulpharsphenamine are ease of administration that subcutaneous or intramuscular injections may be given and that by the latter route, the compound possesses the same or better specific spirocheticidal effects than neoarsphenamine by intravenous injection For my own part, I still prefer intravenous injections of the neoarsphenamine I have been using for years for the treatment of acute early syphilis, for the treatment of chronic syphilis of adults and especially neurosyphilis and congenital syphilis of children, however I believe that sulpharsphenamine by intramuscular injection is worthy of trial

As stated by Boone and Welch, sulpharsphenamine by intramuscular injection is particularly well adapted for the treatment of congenital syphilis and Fergusson and others have found it well adapted for the treatment of syphilis afloat on war vessels More recently, Fordyce, Rosen and Myers have reviewed the literature on sulpharsphenamine along with their own laboratory and clinical investigations and state that the compound must be used with caution from the standpoint of reactions and purpura that it is two and one half times less active than neoarsphenamine therapeutically that it has not shown any special affinity for the central nervous system, and that clinically no superior results were noticeable

2 Reports of such trouble are not available Ballantyne has something to say about thyroid deficiencies and hypertrophies in the new-born but it is evident that he did not find records of exophthalmos in the new born A unilateral exophthalmos suggests some congenital defect involving the eye or some injury connected with labor The fact that the delivery was apparently spontaneous and without evident difficulties would not rule out the possibility of the eye on the affected side having been injured in some way during the course of labor

ICE WATER IN OTITIS MEDIA—APPENDICITIS IN CHILDREN

To the Editor—1 Is it good treatment to drop ice water into the ear of a child suffering from acute otitis media? 2 In acute appendicitis is the walling off in children as rapid complete and effectual as in adults? Is there an indisposition in children to localize and for this reason should a child be operated on more quickly than an adult?

E C McMullen M D Pine Bluff Ark

Answer—1 The rationale of the use of ear drops in acute otitis media depends on the anesthetic action of the solution used notably the phenol in the familiar phenol glycerin preparations, secondly, the weight of a viscid solution against an inflamed drum may have some effect The use of ice water has little, if anything to recommend it

2 Localization of a peritonitis is less likely to occur in infants than in adults General peritonitis is a common complication and is the usual cause of death, although the infants withstand it fairly well Secondary abscesses are relatively common

The power of adhesion lies in the exudation from the omentum and the peritoneum It has been shown that the omentum produces more exudation which contains more fibrin and bactericidal properties than that of the peritoneum The less frequent localization of a peritonitis may be partly due to the fact that the omentum is imperfectly developed in early months of life and partly to the lessened immunity and lack of reaction to infection

In a review of 132 cases of acute appendicitis in infants and young children by Holt in 'Diseases of Infancy and Childhood (New York D Appleton & Co) the mortality was 38 per cent The prognosis is bad because of the difficulties in diagnosis and the late resort to operation

Immediate operation should be performed in all cases of acute appendicitis in children as it is impossible to foretell the outcome and there is less chance of localization The younger the child, the greater is the emergency

POSSIBILITY OF CONGENITAL MALARIA

To the Editor—Please inform me as to why a child cannot be born with malaria even though the pregnant mother has contracted the disease during the last part of the ninth month Please omit name

M D New Jersey

Answer—A child whose mother contracts malaria during pregnancy can be born with the disease, especially if the mother has a severe attack Usually, however, babies born of mothers who have malaria do not show typical signs and symptoms of the disease In Williams' fifteen cases of malaria complicating pregnancy, not one of the babies showed the plasmodium in the blood, but Bodenhauser Deromps and Kolloch report cases of congenital malaria Not all babies born of mothers who have malaria show the disease because the placenta is usually an effective barrier against the plasmodium

An important case report and review of the literature is the following

Arias Aranda C A Proposito del Paludismo Congenito *Archivos Latino-Americanos de Pediatria* **15** 533 (Sept) 1926

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALASKA Juneau March 6 Sec Dr Harry C De Vighne Juneau

CALIFORNIA Los Angeles Feb 27 Sec Dr Charles B Pinkham 623 State Bldg, San Francisco

COLORADO Denver April 3 Sec. Dr Philip Work 324 Metropolitan Bldg Denver

CONNECTICUT Hartford March 13 14 Sec Reg Bd Dr Robert L Rowley 79 Elm St Hartford Homeo Bd New Haven March 13 Sec Dr Edwin C M Hall 82 Grand Ave New Haven

DISTRICT OF COLUMBIA Washington April 10 Sec, Dr Edgar P Copeland Suite 110 1801 Eye St Washington

HAWAII Honolulu April 9 12 Sec, Dr James A. Morgan, Room 48 Young Bldg Honolulu

IDAHO Boise April 3 Commissioner of Law Enforcement Hon F E Lukens Boise

ILLINOIS Chicago April 10 12 Supt of Reg Mr V C Michels, Springfield

MAINE Portland March 13 14 Sec, Dr Adam P Leighton Jr 192 State St Portland

MASSACHUSETTS Boston March 13 15 Sec Dr Frank M Vaughan 144 State House Boston

MINNESOTA Minneapolis April 17 19 Sec Reg Bd Dr A E Comstock 524 Lowry Bldg St Paul Basic Science examinations April 3 Sec Basic Science Bd Dr E T Bell U of Minnesota Minneapolis

MONTANA Helena April 3 5 Sec Dr S A. Cooney Power Bldg, Helena

NEW HAMPSHIRE Concord March 8 Sec Dr Charles Duncan Concord

NEW MEXICO Santa Fe April 9 10 Sec. Dr Wm T Joyner Roswell

OKLAHOMA Oklahoma City March 13 14 Sec Dr J M Byrum, Shawnee

PORTO RICO San Juan March 6 Sec Dr Diego A Biascoechea 3 Allen St San Juan

RHODE ISLAND Providence April 5 6 Sec Dr B U Richards State House Providence

VERMONT Burlington Feb 21 23 Sec Dr W Scott Nay Underhill

WISCONSIN Madison March 17 Sec. Basic Science Bd Prof M F Guyer, U of Wisconsin

Iowa June Examination

Mr H W Grefe, director of Examinations and Licensure of the Iowa Board of Health, reports the written examination held at Iowa City, June 7-9, 1927 The examination covered 8 subjects and included 100 questions An average of 75 per cent was required to pass Eighty-four candidates were examined all of whom passed The following colleges were represented

College	PASSED	Year Grad	Per Cent
Rush Medical College		(1927)	88 1
University of Illinois College of Medicine		(1927)	87 8
State University of Iowa College of Medicine		(1927)	77 80 4 81 6 82 82 4 83 83 83 4 83 6 83 9 84 84 84 1 84 3 84 4 84 4 84 6 84 6 84 6 84 6 84 8 84 8 84 9 84 9 85 6 85 6 85 6 85 8 85 8 85 9 86 1 86 1 86 3 86 3 86 4 86 9 86 9 86 9 87 87 1 87 1 87 3 87 3 87 5 87 6 87 6 87 6 87 6 87 8 88 1 88 1 88 1 88 1 88 1 88 4 88 6 88 8 88 8 89 4 89 4 89 6 89 6 89 6 89 8 89 9 89 9 90 90 3 90 4 90 6 91 1 91 4 91 6 91 6 91 9 92 3 93 93 6
University of Minnesota Medical School		(1927)	84 4
St Louis University School of Medicine		(1927)	85 6
Creighton University School of Medicine		(1927)	87
University of Toronto Faculty of Medicine		(1926)	84 4

Ohio October Reciprocity Report

Dr H M Platter secretary of the Ohio State Medical Board, reports that 17 candidates were licensed by reciprocity and 1 candidate was licensed by endorsement of his credentials, Oct 4, 1927 The following colleges were represented

College	LICENSED BY RECIPROCITY	Year Grad	Reciprocity with
Howard University School of Medicine		(1925)	Kansas
(1926) Dist of Columbia			
Northwestern University Woman s Medical School		(1901)	Indiana
Loyola University School of Medicine		(1926)	W Virginia
Indiana University School of Medicine		(19_6)	Indiana
Kentucky School of Medicine Louisville		(1891)	Kentucky
University of Louisville School of Medicine		(1912)	Kentucky
St Louis University School of Medicine	(1915)	(1926)	Missouri
Creighton University School of Medicine		(1920)	Iowa
Cornell University Medical College		(1920)	New York
University of Buffalo School of Medicine		(1898)	New York
Meharry Med Coll (1913) Georgia (1923) Virginia		(1926)	Louisiana
Medical College of Virginia		(1914)	W Virginia
McGill University Faculty of Medicine		(1922)	Michigan

College	ENDORSEMENT OF CREDENTIALS	Year Grad	Endorsement with
Harvard University Medical School		(1924)	N B M Ex

Book Notices

NOXIOUS GASES AND THE PRINCIPLES OF RESPIRATION INFLUENCING THEIR ACTION By Yandell Henderson and Howard W Haggard American Chemical Society Monograph Series Cloth Price $4 50 net. Pp 220, with illustrations New York Chemical Catalog Company Inc. 1927

The monographs of the series to which this belongs are from recognized authorities Thirty-four previously published, with as many more in preparation, are listed in this volume The subjects covered are of current interest selected by committees which also choose the authors The decisions in both instances are details of plans adopted at meetings in 1919 of the Interallied Conference of Pure and Applied Chemistry in London and Brussels The rapid development of industrial medicine makes this volume timely Many of the investigations of the authors to whom this topic was wisely referred are known to the medical profession Others such as their articles in the *Journal of Industrial Hygiene* and reports made to the New York Bridge and Tunnel Commission and the Bureau of Mines of the Department of the Interior dealing with ventilation of the vehicular tunnel under the Hudson River recently opened, are not as well known to physicians A large part of the first half of the monograph is devoted to respiration and its control, gas laws, the absorption, distribution and elimination of volatile substances by breathing, and the classification of noxious gases and vapors Respiration is reviewed in these chapters largely on an engineering basis In the remaining chapters the various asphyxiating, irritant and anesthetic gases, volatile druglike substances and gases containing metals are dealt with separately, and at the end is a chapter on prevention and treatment of these poisonings The monograph is for chemists, engineers and others engaged in industry References to kindred literature are not abundant They are indispensable to source material, and among them are references to many investigations by the authors But the bibliography should be increased The style is vigorous and lively

CLINICAL LABORATORY PROCEDURES By George L Rohdenburg M D Director of Laboratories Lenox Hill Hospital The Macewen Memorial Lecture 1927 Cloth Price $3 25 Pp 266 New York Macmillan Company 1927

In this laboratory manual, the author gives only that method which practical experience indicates is to be preferred He does not discuss the value of laboratory methods but simply gives the method concisely He does not furnish a bibliography The general subjects taken up are those found in most laboratory manuals, beginning with blood counting and ending with histologic technic The Rohdenburg manual seems to pay especial attention to directions for making up laboratory reagents in connection with the laboratory work concerned The book is of handy size and the pages on the right are left blank for the taking of notes

A TEXT BOOK OF PATHOLOGY By Francis Delafield M D LL D and T Mitchell Prudden M D LL D Revised by Francis Carter Wood M D Director of the Pathological Department St. Luke s Hospital New York Fourteenth edition Cloth Price $10 net Pp 1339, with 850 illustrations New York William Wood & Company 1927

This work owes its origin to the fortunate co-authorship of Prudden in the second edition of Delafield's Handbook of Postmortem Examinations and Morbid Anatomy published in 1885, thirteen years after the first edition With Prudden's help the scope of the work was much enlarged and the title changed to A Handbook of Pathological Anatomy and Histology with an Introductory Section on Postmortem Examinations and the Methods of Preserving and Examining Diseased Tissues It also included instructions for "preparing and examining bacteria" There were 575 pages, and the 146 illustrations were from drawings by the authors The present title was first used with the sixth edition in 1901, when Prudden s management of successive revisions began With the ensuing years, when Prudden was 70 years old, this task was transferred to Wood, trained to the work through assisting Prudden This transfer was in 1919 with the eleventh edition Growth of the book to its present size was gradually attained over many years and arrived at about ten years ago

It is doubtful whether any other treatise on pathology has served as many medical students in this country Its place was won when similar works in English were few Its many elaborations have been timely Not only general pathology and special pathologic anatomy are included, but necropsy technic, ways of preserving tissues, brief summaries of normal anatomy, histologic methods, details of bacteriology and other matters kindred to pathology Its plain, concise style largely the work of Prudden, has been commented on favorably in many reviews A large measure of its success lies in the hundreds of illustrations, many bearing Prudden s initials Many illustrations occupy an entire page Some have a white others a dark or even black background Figures from new hand drawings, photographs of both gross and microscopic disease and colored plates have been added from time to time, so that an unharmonious diversity has resulted The chances of finding in the book some mention of whatever is sought are large, but this is matched by the likelihood of disappointment over the scanty information Profuse references direct the reader to other sources The chapter on lesions caused by various poisons has been omitted in this edition and others probably will be dropped in future editions as they can with advantage

Should commercial expediency and sales profits allow, this work might well appear in separate volumes, each thorough enough to meet the needs of advanced students With the preliminary education required for medicine and the prevalence of seminars, journal clubs and good medical libraries, the time has passed when an attempt should be made to embody in a single volume information in so many fields in pathology to fulfil the demands of present students of medicine This is forcibly brought to the attention of medical students by even a cursory acquaintance with standard textbooks on pathology in languages other than English

DER TONUS DER SKELETTMUSKULATUR Von Dr E A Spiegel Privatdozent Assistent am neurologischen Institut der Universitat Wien Second edition Paper Price 18 marks Pp 202 with 72 illustrations Berlin Julius Springer 1927

This is a short but excellent monograph on a subject of fundamental importance both in physiology and in medicine There are five chapters a short one on the historical development of our conception of tonus, a chapter on the energetics of tonus in muscle a chapter on the methods of measuring tonus, in which the author describes, among other things, a method introduced by himself a long chapter on the reflex of central nervous factors in tonus, and a final chapter on the question of sympathetic and parasympathetic nervous system relations to the tonus mechanism The presentations of the data are generally lucid, critical and sound but some of the important recent publications seem to have escaped the author's notice, for example, the paper by Dr Tower on the question of sympathetic nervous relation to skeletal muscle tonus

PLASTIC SURGERY OF THE ORBIT By J Eastman Sheehan Professor of Plastic Surgery New York Post Graduate Medical School and Hospital With a preface by Pierre Sebileau professeur de la Faculte de medecine de Paris Cloth Price $12 Pp 348 with illustrations New York Macmillan Company 1927

This is one of the best books on plastic surgery that have yet appeared It starts with a two and a half page preface by Pierre Sebileau of the University of Paris that is a graceful gesture Part I thirty eight pages is given over to a careful surgico-anatomic description of the orbital cavity and its neighboring parts Part II, fifty pages, deals with the preparation and after-care of skin grafts and general considerations It is excellently written full of general and surgical common sense and evidently based on a wide experience Part III, 205 pages has to do with operative procedures Not only are textbook conditions considered but also the anomalous scars and defects that the average ophthalmic surgeon sees but seldom At times the written text is somewhat vague However, the continuity is carried by the illustrations which are uniformly good, so that no doubt as to detail is left in the reader s mind As an appendix, there is a chapter on anesthesia in facial plastic surgery by I W Magill of London This is in keeping with the the high character of the book The bibliography is scanty and at times priority of procedure may be questioned But these are such minor points that they are completely lost sight of in the general excellence of the work

A DICTIONARY OF MODERN ENGLISH USAGE By H W Fowler Cloth Price $7 50 the set (with the Concise Oxford Dictionary of Current English) Pp 742 New York Oxford University Press 1927

THE CONCISE OXFORD DICTIONARY OF CURRENT ENGLISH By H W Fowler and F G Fowler Cloth Price $7 50 the set (with a Dictionary of Modern English Usage) Pp 1064 New York Oxford University Press 1927

For any one who wishes to write literate English the two volumes here reviewed are exceedingly helpful Whereas the dictionary may not be especially readable the volume on modern English usage is a thing of joy forever It is full of humor satire and remarkable examples The philosophy that permeates the author s discussions indicates a highly creditable attitude toward life in general Such sections of the book as cast iron idiom curtailed words the discussion of that and which of Latin plurals and of novelese are striking The physician to whom writing is more than a system of personal publicity will find these two volumes the most valuable that he can add to his library

THE STANDARDIZATION OF ERROR By Vilhjalmur Stefansson M A LL D Cloth Price $1 Pp 83 New York W W Norton & Company Inc 1927

One of our most noted arctic explorers here indulges in some philosophical comments on knowledge and makes his consideration fascinating He is concerned largely with the tendency of human beings to accept superstitions as fact For instance he says What s the good of an Englishman s learning first that all Americans speak through their noses and, secondly why they do so when he has to find out eventually that they do not? Mr Stefansson feels that we must have knowledge that cannot be contradicted His analysis of the kindly frauds of that movie of Eskimo land Nanook is one of the most uproarious farces that has marked modern literature His conclusion is that truth is good in every field of science that it is as good as it is bad in subjects standing between science and religion and that it is generally to be avoided when it conflicts with religion

DEUTSCHE FRAUENHEILKUNDE Geburtshilfe Gynakologie und Nachbargebiete in Einzeldarstellungen Herausgegeben von Rud Th von Jaschke Band III Physiologie Pflege und Ernahrung des Neugeborenen einschliesslich der Ernahrungsstorungen der Brustkinder in der Neugeburtszeit Von Dr Rud Th von Jaschke o o Professor der Geburtshilfe und Gynakologie in Giessen Second edition Paper Price 39 marks Pp 522 with 119 illustrations Munich J F Bergmann 1927

As a pediatrician von Jaschke must be a consummate gynecologist How daring the obstetrician who contributes a comprehensive monograph on the new born! If the study of the new born is an avocation with the author he must address himself to his major interest with frenzied zeal Here is a masterly monograph prepared with detailed thoroughness and enriched by painstaking photographs diagrams and charts Such a product of the obstetric services in American institutions would justifiedly endanger the back to the pediatrician movement which aims to deliver the new born into the figurative arms of the expectant pediatrician Von Jaschke discusses the physiology care and feeding of the new-born, the premature and debilitated infant and nutritional disturbances of the breast-fed from the Robin-Magitot folds and Bohn s nodes to the chemistry of "witch's milk It is indicative of the minute detail of the work to mention that spinal fluid considerations happen to be omitted It is hardly criticism to call attention to the absence of a description of the electrical breast pump in the section on breast pumps, which portrays with faithful display and diagrammatic pomp the hand and water varieties However, the reader must remember that the author is an obstetrician, and not so long ago a stubborn continental pediatrician scoffed at electrical breast pumps in an institution devoted to the care of the new-born and their mothers

Books Received

Books received are acknowledged in this column and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender Selections will be made for more extensive review in the interests of our readers and as space permits Books listed in this department are not available for lending Any information concerning them will be supplied on request.

The Evolution of Man Scientifically Disproved in 50 Arguments Designed (1) as an up to date text book and a companion to all other text books on evolution and (2) as an antidote to books in libraries teaching evolution infidelity and atheism and (3) as an aid to all students parents teachers ministers lawyers doctors and all other lovers of the truth By Rev William A Williams D D Cloth Price, $1 Pp 126 New Jersey W A Williams 1928

What the Reverend Williams thinks is the truth

Handbook of Diseases of the Nose Throat and Ear for Students and Practitioners By W S Syme M D F R S E Lecturer on Diseases of the Throat and Nose Glasgow University Second edition Cloth Price $5 Pp 400 with illustrations New York William Wood & Company 1927

Popular lectures reprinted in a small book

Kurze Geschichte der Chirurgie Von W von Brunn Professor fur Geschichte der Medizin an der Universitat Rostock Paper Price 24 marks Pp 339 with 317 illustrations Berlin Julius Springer 1928

Beautifully illustrated volume with sound background, written in easily readable German

Animal Biology By J B S Haldane and Julian Huxley Cloth Price $2 50 Pp 344 with 122 illustrations New York Oxford University Press 1927

Sound textbook for intermediate work in biology

Cuestiones actuales en el tratamiento de la sifilis (Traducida del catalan por el autor) Por Antonio Peyri Paper Price 4 ptas Pp 161 Barcelona Arnau de Vilanova 1927

Popular handbook of information on syphilis

The Portrait Invisible By Joseph Gollomb Cloth Price $2 Pp 310 New York Macmillan Company 1928

A new type of detective story with a peculiar psychoanalytic character called the goldfish

The Oxygen Demand of Polluted Waters I Bibliographical A Critical Review II Experimental The Rate of Deoxygenation By Chemist Emery T Theriault United States Public Health Service Treasury Department—United States Public Health Service Public Health Bulletin No 173 Prepared by direction of the Surgeon General Paper Price 25 cents Pp 185 Washington Government Printing Office 1927

A Description of Leprosy Its Etiology Pathology Diagnosis and Treatment By H W Wade M D Chief Pathologist of Culion Leper Colony and J N Rodriguez M D For Health Officers and Others Concerned in Antileprosy Work. Prepared under the auspices of the Culion Medical Board Philippine Health Service Paper Pp 93 with illustrations Manila Bureau of Printing 1927

Las secreciones internas de las glandulas sexuales El problema de la glandula de la pubertad Por Alexander Lipschutz professor de fisiologia y director del instituto de fisiologia de la Universidad de Concepcion (Chile) Un prefacio por F H A Marshall F R S Translated by F Martinez Nevot Second edition Cloth Pp 492 with 140 illustrations Madrid Javier Morata 1928

Better Doctoring Less Dependency A Study of the Relations Between Medical and Non Medical Agencies with Special Reference to Clinic and Family Service By Louise Stevens Bryant Ph D With an introduction by John A Lapp LL D Paper Pp 90 with illustrations New York Committee on Dispensary Development of the United Hospital Fund of N Y 1927

Birth Stillbirth and Infant Mortality Statistics for the Birth Registration Area of the United States 1925 Eleventh Annual Report Part 1 Summary and Rate Tables and General Tables Department of Commerce—Bureau of the Census Herbert Hoover Secretary Paper Price 60 cents Pp 245 Washington Government Printing Office 1927

Primary Studies for Nurses A Text Book for First Year Pupil Nurses Containing Courses of Studies in Anatomy Physiology Chemistry Hygiene Bacteriology Therapeutics and Materia Medica Dietetics and Invalid Cookery By Charlotte A Aikens Sixth edition Cloth Price $3 25 Pp 572 with 142 illustrations Philadelphia W B Saunders Company 1927

Annual Survey of American Chemistry Volume II July 1 1926 to July 1 1927 Edited by Clarence J West Director Research Information Service National Research Council under the Auspices of the Division of Chemistry and Chemical Technology William J Hale Chairman Cloth Price $3 net Pp 415 New York Chemical Catalog Company, Inc 1927

Adressbuch der medizinisch technischen Industrie Herausgegeben unter Mitwirkung der Fachverbände in der medizinisch technischen Industrie Second edition of Hand und Spezial Adressbuches fur Industrie und Vertrieb arztlicher Bedarfs Artikel Paper Price 6 marks Pp 105 Leipsic Johann Ambrosius Barth 1928

Vorlesungen uber das Zentralnervensystem der Wirbeltiere. Eine Einfuhrung in die Gehirnanatomie auf vergleichender Grundlage. Von Hartwig Kuhlenbeck Dr med et phil Assistent am anatomischen Institut der Universitat Breslau Paper Price 18 marks Pp 354, with 237 illustrations Jena Gustav Fischer 1927

Edmund Lesser s Lehrbuch der Haut und Geschlechtskrankheiten Band II Geschlechtskrankheiten Von J Jadassohn Geh Medizinalrat o Professor und Direktor der Universitats Hautklinik in Breslau Fourteenth edition Cloth Price 26 marks Pp 467, with 95 illustrations Berlin Julius Springer 1927

Exposures of Long Bones and Other Surgical Methods By Arnold K Henry M B B Ch F R C S I Professor of Clinical Surgery Royal School of Medicine Cairo Foreword by Sir W I de C Wheeler Cloth Price $3 50 Pp 80 with 51 illustrations New York William Wood & Company 1927

Lehrbuch der klinischen Untersuchungsmethoden für Studierende und praktische Arzte. Band I Halfte 1 Von Prof Dr H Sahli Direktor der medizinischen Universitatsklinik in Bern Seventh edition Paper Price 26 marks Pp 496 with 298 illustrations Leipsic Franz Deuticke 1928

Memoirs of the Department of Agriculture in India Studies in Bovine Lymphangitis By Krishnamurti Ayyar I V S, Professor of Pathology and Bacteriology Madras Veterinary College Paper Price 2s Pp 127 with illustrations Calcutta Government of India Central Publication Branch 1927

Physical Chemistry and Biophysics for Students of Biology and Medicine By Matthew Steel Ph D Professor of Biological Chemistry the Long Island College Hospital Brooklyn N Y Cloth Price $4 net Pp 372 with 38 illustrations New York John Wiley & Sons, Inc 1928

Die Psychologie in der Psychiatrie Eine Einfuhrung in die psychologischen Erkenntnisweisen innerhalb der Psychiatrie und ihre Stellung zur klinisch pathologischen Forschung Von Dr Arthur Kronfeld Paper Price 4 80 marks Pp 106 Berlin Julius Springer 1927

Use and Testing of Sphygmomanometers By J L Wilson Assistant Physicist H N Eaton Engineer and H B Henrickson Assistant Physicist Bureau of Standards Paper Price 20 cents Pp 729 764 with illustrations Washington Government Printing Office 1927

Annual Report of the Surgeon General U S Navy Chief of the Bureau of Medicine and Surgery to the Secretary of the Navy for the Fiscal Year 1927 Paper Pp 337 Washington Government Printing Office 1927

Transactions of the Medical Society of the State of North Carolina Seventy Fourth Annual Session April 1927 Cloth Pp 576 with illustrations Southern Pines N C North Carolina Tuberculosis Association 1927

Administration Report of the Director of Medical and Sanitary Services for 1926 Part IV Education Science and Art (C) Paper Price Re 1 75 Pp 73 Colombo H Ross Cottle Government Printer 1927

Laboratory Manual of Colloid Chemistry By Harry N Holmes Professor of Chemistry in Oberlin College Second edition Cloth Price $3 net Pp 228 with 70 illustrations New York John Wiley & Sons Inc 1928

A Textbook of Bacteriology and Its Applications By Curtis M Hilliard Professor of Biology and Health Simmons College Cloth Price $2 80 Pp 329 with 59 illustrations Boston Ginn & Company 1928

Técnica quirurgica vaginal Por Luis Recasens Serrano catedratico de obstetrica y ginecologia por oposición en la Universidad de Zaragoza Cloth Pp 227 with 163 illustrations Madrid Javier Morata 1928

May Day—Child Health Day 1927 This account was prepared from reports submitted by State May Day Chairmen Paper Price 10 cents Pp 114 New York American Child Health Association 1927

Proceedings of the Medical Association of the Isthmian Canal Zone 1921 926 Vol XIV Paper Pp 133 with illustrations Mount Hope C Z Panama Canal Press 1927

Annual Report of the Director United States Veterans Bureau for the Fiscal Year Ended June 30 1927 Paper Pp 160 Washington Government Printing Office 1927

Handbuch der Lichttherapie Herausgegeben von W Hausmann und R Volk Paper Price 36 marks Pp 444 with 142 illustrations Vienna Julius Springer 1927

Methods and Problems of Medical Education (Eighth Series) Paper Gratis Pp 372 with illustrations New York Rockefeller Foundation 1927

Proceedings of the Twenty First Annual Convention of the Association of Life Insurance Presidents Paper Pp 288 New York 1927

Medicolegal

Awards for Injuries No Defense for Malpractice

(Hoehn v Schenck (N Y) 223 N Y Supp 418)

The Supreme Court of New York, appellate division, second department, says that as a separate defense to this action against a physician for alleged malpractice it was alleged that the plaintiff s fractured foot, suffered by him in the course of his employment, was compensated for by an award made by the state industrial commission, inclusive of the 'consequential result of such injury" In reply, the plaintiff denied that he was compensated by the commission for 'the conseqential result of such injury", i e for such results as were occasioned by the defendant s wrongful act

The court at special term dismissed the complaint on authority of *White v Matthews* (special term supreme court, New York County) 223 N Y Supp 415 That case followed *Pitkin v Chapman* (supreme court, special term, Warren County) 200 N Y Supp 235 In the White case the plaintiff moved to strike out the defense of the defendant physician which interposed the same claim as was presented in the case now under review In the Pitkin case the motion was made by the physician defendant for judgment on the pleadings In the opinion of this court the basic error in the view expressed in the Pitkin case was the assumption that the employer and the physician were joint tort-feasors (wrongdoers), and that there was but "one wrong" The distinct liabilities were just as pronounced as though the plaintiff, whose left leg was injured in the course of his employment, shortly thereafter suffered an injury to his right leg, which a physician negligently and unskilfully treated The fact that the maltreatment was to an already injured member was but a difference in degree, and not in the primary duty

Nor does this court think that there was any act by the plaintiff in the instant case that would subject him to the charge of an election between inconsistent remedies in submitting his claim against his employer to the state industrial board under the workmen s compensation act The basis of an estoppel by election of remedies rests for its application on the primary factor that the "same wrong' is involved The "same wrong' is in no wise here involved This court is not gainsaying the well settled proposition that, where one is injured by the negligence of another, he is not responsible for the mistaken advice of a competent physician, on which the injured person acts in good faith and with ordinary care, and that in such circumstances the negligent party is liable for all the consequences following the wrong Here however, two independent acts were presented If this court assumes that one act was the employer s negligence, and of that there was nothing in the record, nor will it be presumed, in view of the fact that compensation is not based on negligence, but solely on the fact of employment, and indulges in the further assumption, as indeed this court must on the motion made by the defendant, that he was guilty of malpractice, the two unrelated wrongs were independent in their results, and gave no basis for a claim of election when the plaintiff applied for and received compensation under the act That these two alleged wrongs in no wise present inconsistent remedies whereby an action for one of the wrongs is to be deemed an election barring the maintenance of an action on the other seems to have been announced in *Radman v Haberstro* (supreme court general term fifth department) 49 Hun 605 1 N Y S 561, it being held that bringing an action against a physician for malpractice, through which it was alleged the plaintiff lost his hand, is not an election between inconsistent remedies which will prevent an action against the party through whose negligence the plaintiff's hand was injured

While it would be inequitable for the plaintiff to receive from the state industrial board in addition to an award for injury arising out of and in the course of his employment, compensation for the result of the physician s alleged wrongful act this court does not see how the defendant here could avail himself of that claim as a bar to the maintenance of the plaintiff's action This overpayment, assuming it to have been made by the state industrial board or the insurance carrier, may give rise to a right either in the board or in the carrier to recover the excess in a court of equity, or it may be availed of by the defendant in mitigation of damages Order dismissing the complaint reversed on the law, and motion made by the defendant for judgment on the pleadings denied

Dying Declarations Not Admissible in Abortion Cases

(Winfrey v State (Ark) 296 S W R 82)

The Supreme Court of Arkansas in reversing a judgment of conviction of defendant Winfrey on a charge of abortion, says that the trial court permitted two witnesses to testify to statements made by the woman a short time before her death that the defendant had given her a certain drug for the purpose of causing her to abort, and that he had had intercourse with her some time in October, before her death in January, from which she became enceinte, on the theory that such statements were competent and admissible as dying declarations The testimony of these two witnesses was objected to, and, on being overruled, proper exceptions were saved The objection and exceptions were well taken, not because the woman was not in extremis, but because dying declarations are never admissible, except in homicide cases, when the circumstances of the death of the declarant and the guilt or innocence of the party charged are the subject of the inquiry In several states the dying declarations of a woman whose death resulted from an abortion or an attempt to procure an abortion on her have been made admissible by statute, but no such change has been made in the Arkansas statute In 1 R C L p 85 section 21, discussing the subject of dying declarations in abortion cases, it is said "As a general rule dying declarations of the woman are not admissible against the accused, where the prosecution is for the abortion, and not for the homicide of the woman" However, section 783 of Crawford & Moses' (Arkansas) Digest provides 'The mother shall be a competent witness in all cases of bastardy, unless she be legally incompetent in any case, and if she be dead at the time of the trial her declarations, made in her travail and proved to be her dying declarations shall be evidence '

Death from Pneumonia Following Heat Prostration

(King v Buckeye Cotton Oil Co (Tenn) 296 S W R 3)

The Supreme Court of Tennessee, in reversing a judgment which dismissed the plaintiff s petition to recover under the workmen s compensation act of that state for the death of her husband, says that the husband while employed as a fireman in the defendant s boiler room suffered what is usually termed heat prostration, two days after which pneumonia developed the pneumonia causing his death two days later This court found great conflict in the opinions of courts of other jurisdictions as to whether injury or death from heat prostration is within the application of the workmen s compensation statutes, the divergence of opinion on the question being largely controlled by differences in the language of the various statutes

In the present case if the workman overheated to a degree short of prostration or exhaustion had stepped outside the boiler room, and, cooling off too quickly had contracted a cold resulting in pneumonia, no element of accident or injury by accident would have been present, and the cold and pneumonia, whether within the category of occupational diseases or not would clearly not be an injury by accident or the result thereof In such a case the overheated condition of the workman would be the natural result of the character of the work in which he was engaged Or if a fireman by reason of his daily exposure to the increased heat of a boiler room should become gradually impaired in strength and in his powers of resistance, and should thereby become subject to a disease, his case would clearly be within the rule applied in *Meade-Fiber Corp v Starnes*, 147 Tenn 362, 247 S W 989, wherein it was held that a disease resulting from the breathing of the dust necessarily caused by the very work in which the employee was engaged did not constitute an accidental injury

This court does not think, however, that heat exhaustion or heat prostration can be said to be a necessary incident or an expected result of employment as a fireman in a boiler room Whether the condition is caused solely and entirely by the excessive temperature of the room or place in which the employee is at work or whether the excessive temperature of the place and the present physical condition of the workman combine to produce the result, there is an element of sudden, unforeseen and unexpected casualty and misfortune in the result The fireman expected to become hot, but he did not expect to become overheated to the point of exhaustion or prostration The difference may be one only of degree, but this court sees no reason why such a difference may not mark the boundary between the expected or anticipated and the unexpected or fortuitous

This court does not find anything in the Tennessee statute or in the opinion of *Meade-Fiber Corp* v *Starnes* which would exclude from the application of the statute any 'injury by accident," regardless of whether the injury is manifest by a condition of the body which medical science terms a disease condition rather than a traumatic condition The exclusion is of any disease which does not amount to an "injury by accident," or which does not naturally result from such an injury If the heat prostration suffered by the workman in the case at bar is to be classed as a disease, then it is assignable to the fact that at a particular identified time the workman, while in the course of his employment, became overheated, a condition unusual, unexpected and casual, and this court is of the opinion that the heat prostration amounted to an injury by accident within the meaning of the compensation statute of the state

It remained to be considered whether the pneumonia, which was the direct and efficient cause of the death of the workman, must be said to have "naturally resulted' from the injury, in view of the finding of fact that the heat prostration "was an exciting or contributing cause of the development of the pneumonia,' and "was a contributing, moving or exciting cause" This court is of the opinion that whenever an injury by accident can be said to have been the moving, exciting or contributing cause of a resulting disease, such disease must be said to have "naturally resulted' from the injury, and it is wholly immaterial whether such disease often or usually results from similar injuries It is sufficient in a particular case if a requisite causal connection is established between the injury and the disease

Treatment of Slight Hernia—Use of Best Judgment

(Bailey v St Louis San Francisco Ry Co (Mo) 296 S W R 477)

The Springfield (Mo) Court of Appeals, in reversing a judgment for damages which was rendered for the plaintiff says that certain medical testimony went no further at the most than to tend to establish the fact that the plaintiff might have been afflicted with a slight hernia at the time he entered the hospital in which he alleged that he was entitled to hospital service at the hands of the defendant The physicians who testified were practically agreed that the best treatment for a slight hernia is, first, rest and observation for a period of time sufficient to determine whether a cure can be effected without an operation, and, if not, then an operation should be performed, or the patient advised to wear a truss The position of the plaintiff was that the surgeons at the hospital should have performed an operation on him or, if that was not thought to be necessary, he should have been retained in the hospital a much longer period to see if his injury would heal without an operation

Physicians and surgeons must be allowed a wide range in the exercise of their judgment and discretion The science of medicine is not an exact science In many instances there can be no fixed rule by which to determine the duty of a physician, but he must often use his own best judgment and act accordingly By reason of that fact the law will not hold a physician guilty of negligence as long as he uses his best judgment, even though his judgment may prove erroneous in a given case, unless it be shown that the course pursued was clearly against the course recognized as correct by the profession generally As long as there is room for an honest difference of opinion among competent physicians, a physician who uses his own best judgment cannot be convicted of negligence, even though it may afterward develop that he was mistaken

Under the rule just stated, the plaintiff in this case failed to make a case against the defendant for the failure of the surgeons of the hospital to operate on him, and the question of liability based on that charge of negligence should not have been submitted to the jury If there was any ground of recovery in this case, it must be based on the fact of a too early discharge of the plaintiff from the hospital, whereas the petition did not state that ground of negligence as clearly as it should, if it was to be relied on If that ground of negligence was to be an issue on another trial, the petition should be amended to charge it directly and the proof should establish it

Damages Not Considered Excessive for Loss of Eye

(Szasz v Joyland Co (Calif) 257 Pac R 871)

The District Court of Appeal of California, third district, in affirming a judgment for $20,000 damages in favor of the plaintiff, says that he, while watching a man shooting at a shooting gallery in the defendant's amusement park, was hit in the eye by a fragment of a 0 22 soft-lead bullet It was found impossible to remove this foreign substance and the eyeball had to be removed to save the other eye In view of the pain and suffering caused by the injury and the mortification and humiliation which would naturally be suffered in the future, in addition to which the plaintiff would be seriously handicapped through life by the loss of his eye, the court does not think that the verdict was excessive in amount and holds that it could not be disturbed

Compensation Allowed for Fatal Injury to Epileptic

(Cusick s Case (Mass) 157 N E R 596)

The Supreme Judicial Court of Massachusetts, in affirming a decree awarding compensation to a sister for the death of her brother, says that it was agreed that the latter was employed by the town of Brookline, and that the town had accepted the workmen's compensation act The employee was found unconscious at the foot of a flight of stairs in the town stable belonging to the employer, and died from a fracture of the skull resulting from the fall The medical examiner testified that the employee was subject to attacks of epilepsy, that he "started in to work and in going down the stairs had an attack and fell" If the employee were not subject to an attack of epilepsy, and fell on the stairs while occupied in the course of his employment, his dependents could recover compensation under the statute The fact he suffered from epilepsy did not bar a recovery The protection of the statute is not limited to employees who are in good health It includes all employees mentioned in the statute who are in the service of the employer under a "contract of hire" An employee cannot recover under the statute unless the injury is received while he is engaged in the course of his employment and the injury arises out of or is caused by the employment But if while doing the work for which he is hired, he suffers an injury that may be attributed to his employment and not solely to some disease or physical weakness not caused by the employment, he may recover It might well have been found that this employee's death resulted not from epilepsy but because of the fracture of his skull The circumstance that the epilepsy contributed in part to the fall did not prevent a finding of a causal connection of the employment with the injury

Society Proceedings

COMING MEETINGS

American Association of Anatomists Ann Arbor April 5 7 Dr Lewis H Weed Johns Hopkins Medical School Baltimore Secretary
American College of Physicians New Orleans March 5 9 Mr E R Loveland The Covington 37th and Chestnut Streets Philadelphia Sec y
Louisiana State Medical Society Baton Rouge April 10 12 Dr P T Talbot 1551 Canal Street New Orleans Secretary
Tennessee State Medical Association Nashville April 10 12 Dr H H Shoulders Lambuth Building Nashville Secretary

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to The Journal in America for a period of three days No foreign journals are available prior to 1921 nor domestic prior to 1923 *Periodicals published by the American Medical Association* are not available for lending but may be supplied on order Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested)

Titles marked with an asterisk (*) are abstracted below

American J Diseases of Children, Chicago

35 1 170 (Jan) 1928

*Cardiac Failure in Children Under Five Acute Rheumatic Myocarditis P E Rothman and B W Leonard Baltimore —p 1

*Effect of Ultraviolet Rays on Blood of New Born Infants II Erythrocytes and Hemoglobin H N Sanford Chicago —p 9

*Scarlet Fever Antitoxin Report of 465 Cases R C Eley New York —p 14

Surface Tension of Blood Plasma in Children Variations in Disease and Relation to Time Drop Sedimentation Rate and Viscosity E B Clark San Francisco —p 18

*Analysis of Anorexia W M Bartlett Morristown N J —p 26

*New Test for Hearing in New Born Conditioned Reflex C A Aldrich Winnetka Ill —p 36

Effect on Urine of Addition of Acids and Alkalis to Diet of Infants D Greene New York —p 38

*Congenital Syphilis *Treatment by Intraperitoneal Injection of Neo*arsphenamine C G Grulee H N Sanford and P C Waldo Chicago —p 47

Respiratory Metabolism in Infancy and in Childhood VII Elimination of Water Through Skin and Respiratory Passages of Infants S Z Levine and J R Wilson New York —p 54

*Acute Intussusception Manipulative Reduction Under Fluoroscopic Control V R Stephens Berwyn Ill —p 61

*Acute Osteomyelitis of Superior Maxilla in Young Infants M H Bass New York —p 65

Dermatomyositis Case with Necropsy C Moore and L A Ko h Omaha —p 71

Myatonia Congenita of Oppenheim J M Nielsen Battle Creek Mich —p 82

Amaurotic Family Idiocy (Tay Sachs Type) Case with Protracted Course G B Hassin and A H Parmelee Chicago —p 87

*Breast and Bottle Shy Infant Nursing Only When Asleep G J Feldstein *Pittsburgh* —p 103

Case of Congenital Occlusion of Duodenum by Complete Diaphragm J A Garvin Cleveland —p 109

Physical Problems of Abnormal Behavior I S Wile New York —p 113

Soranus of Ephesus J Ruhrah Baltimore —p 120

Effect of Digitalis in Heart Failure in Children —Rothman and Leonard report on the effect of digitalis in two cases of heart failure in infants The histories of both children were almost identical One was 14 months of age and the other 16 months There was no evidence pointing to either a rheumatic or diphtheritic etiology Their illnesses were of short duration and on admission they were suffering from myocardial decompensation Their hearts were tremendously enlarged, and the roentgenograms were similar to those in cases of idiopathic hypertrophy of the heart Digitalis was administered and was followed by prompt improvement Although the etiology of the myocardial failure is still a matter for speculation, the response to digitalis was sufficiently conclusive to warrant the use of the drug in similar cases

Effect of Ultraviolet Rays on Blood of New-Born —This study is based on observations in a series of 200 new-born infants, during a period of eight months The erythrocyte count and hemoglobin determinations were made within six hours after birth and at twenty-four hour intervals thereafter The determinations were made at the same time every day Treatments with the ultraviolet ray were begun on alternate infants on the second day and continued thereafter at the same time on each of the following four days A large number of infants did not show any change and a considerable number showed a definite decrease in the number of blood cells and the hemoglobin content Sanford obtained the most spectacular results in those patients who had a low hemoglobin content and a comparatively low cell count The results would indicate a stimulation of the hematopoietic organs

Use of Antitoxin in Scarlet Fever —In a study of 215 cases of this disease Eley found antitoxin of definite value All patients however, should not receive this treatment The mild and the moderately sick patients do not receive enough benefit to warrant the treatment with antitoxin Not only does the antitoxin cause the temperature to fall to 100 F or below within from twenty-four to forty-eight hours but the entire clinical picture is changed The rash fades more rapidly, the subjective symptoms disappear and the patient feels improved In those cases in which the patients do not show an improvement after forty-eight hours, a second dose of antitoxin should be given Extremely ill and toxic patients should be given the antitoxin either intravenously or intravenously and intramuscularly combined Scarlet fever antitoxin decreases the number of complications The exact dosage to be given cannot be stated in a categoric manner as the severity of the case, and the age and the size of the patient must be considered The sooner antitoxin is used, the more immediate will be the results

Anorexia —*The most common pathologic conditions* which Bartlett finds associated with chronic anorexia are septic tonsils and adenoids The most efficient and reliable method of treatment is the introduction of fresh calf s liver broiled beefsteak and lamb's kidneys into the diet of the child The feeding of liver may be a specific stimulant to the appetite

Test for Hearing in New-Born —The hearing test devised by Aldrich consists in establishing a conditioned reflex with sound as one stimulus and pain as the other At half hour intervals a small dinner bell is rung beside the baby s crib in such a way that the bell can be seen while at the same time the sole of the right foot is firmly scratched with a pin When these stimuli are applied the child cries out lustily and draws up the right leg After perhaps twelve or fifteen applications the infant cries and draws up the leg when the bell is rung and the foot is not touched

Treatment of Congenital Syphilis —In twenty-five cases reported by Grulee et al the method of administration consisted of a sterile preparation of the abdomen similar to that used in giving any other intraperitoneal injection The ideal site for entrance of the needle is located in the middle of the sheath of the left rectus slightly below the level of the *umbilicus This spot was chosen because experiments on* animals showed that it is necessary to go below any possible limit of the omentum A site too far below the umbilicus will endanger the bladder The needle preferably of small gage (18 gage), is inserted as for an ordinary intraperitoneal injection The solution consists of 150 mg of neoarsphenamine dissolved in 15 cc of warm sterile water The child of average weight, 10 pounds (4 5 Kg), should receive 50 mg or 5 cc of the solution The needle must be pushed well *through the peritoneum and into the peritoneal cavity* The substance is then injected as fast as the plunger will fall in the syringe and sprayed over the peritoneal contents Sixteen patients were clinically cured four showed distinct clinical improvement, but were removed from the hospital by their parents before treatment could be concluded Three children died during treatment, only one of these deaths could be attributed to the form of treatment Two patients were given single injections of neoarsphenamine for diagnostic purposes Intraperitoneal injection of arsphenamine is indicated in the treatment of children who have congenital syphilis rapidity of action is desired, and the small veins make intravenous injection impossible

Reduction of Acute Intussusception by Manipulation —Stephens advocates reduction of the intussusception by a barium enema and manipulation Visual control of the amount of enema admitted into the bowel is obtained and dangerous distention can be avoided Finally there need be no doubt about the completeness of the reduction in most cases

Acute Osteomyelitis of Superior Maxilla —Bass describes a condition characterized by a definite clinical syndrome A newly born or a young infant suddenly becomes ill with fever and prostration and shows a swelling and redness about the tissues of one eye, this is followed or is accompanied by a purulent unilateral nasal discharge, by swelling and softening of the alveolar border of the superior maxilla on the affected side and by pointing and the formation of abscesses on the hard palate, the alveolar border and often on the face between the eye and the nose Sequestrums and frequently small teeth are discharged from these sinuses The treatment consists of keeping the fistula open and of removing sequestrums as they appear If the process points on the face, a small incision may be made without fear of leaving a large permanent scar As foci point on the palate and gum, they should be opened The eye must be protected with compresses and frequently cleansed Two cases are reported

Breast and Bottle Shy Infant—Feldstein's patient would nurse from the bottle in the dark only, and even then never unless it was given the bottle while asleep

Archives of Dermatology and Syphilology, Chicago

17 1 152 (Jan) 1928

- Dermo Epidermic Interchanges as Controlled by Study of Melanic Pigment Esters of Cholesterol (Xanthoma) and Hemosiderin (Schamberg s Disease) L M Pautrier Strasbourg France—p 1
- *Use of Gentian Violet Locally in Dermatologic Conditions A R McFarland Rochester N Y—p 16
- Eponyms of Dermatology Second Series H Goodman New York—p 23
- Fungi and Fungous Diseases Lecture II A Castellani New Orleans—p 61
- Pemphigus Chronicus with Significant Antemortem and Postmortem Bacteriologic Observations Case E L McEwen Chicago—p 98

Use of Gentian Violet to Prevent Infection—Some results are reported by McFarland concerning the clinical use of gentian violet locally in certain pyogenic infections of the skin and its use as a preventive of infection Good results have been obtained in the treatment of infectious eczematoid dermatitis, certain cases of impetigo, folliculitis, furunculosis and one case of mycotic infection of the mouth Gentian violet is useful in postoperative treatment when diathermy or fulguration have been employed Negative results were obtained in the treatment of patients who had coccigenic sycosis barbae and epidermophytosis of the feet The conspicuous color and tendency to staining are the chief drawbacks to the more frequent and extensive use of gentian violet

Boston Medical and Surgical Journal

197 1297 1340 (Jan 12) 1928

- *Intussusception W E Hartshorn New Haven Conn—p 1297
- *Intracranial Hemorrhage in New Born T C Greene Peking—p 1302
- *Exophthalmic Goiter Symptoms J L DeCourcy Cincinnati—p 1305
- Some Newer Industrial Hazards F B Flinn New York—p 1309
- *Hernia in Employees of Grinding Wheel Factory W I Clark Worcester, Mass—p 1314
- Quantitative Study of Ultraviolet Transmitting Glasses H Goodman, New York and W T Anderson Jr Newark N J—p 1316
- Instrument to Facilitate Operation for Tonsillectomy L Arkin, Boston—p 1318

197 1341 1384 (Jan 19) 1928

- Unrelieved After Surgical Operation A G Rice Springfield Mass—p 1341
- Fundus Changes in Arteriosclerosis and Nephritis Their Significance W B Lancaster Boston—p 1346
- Case of Pulmonary Mycosis W R Stokes and S McCleary Baltimore—p 1350
- Structural Abnormalities of Foot Treatment P N Jepson Boston—p 1353
- Information Reference and Bibliographic Service J F Ballard Boston.—p 1355
- Dr Samuel H Durgin Health Pioneer B R Richards Albany, N Y—p 1361
- Ruptured Pus Tube F J Lynch Boston—p 1362
- Auxiliary Ambulatory Device P N Jepson Boston—p 1364

Intussusception—Hartshorn says that the majority of cases of intussusception have as a background one of three things 1 An unusually mobile cecum or ileum This is common in infancy and is the reason more cases occur at this time than at any other 2 A tumor of the ileum near the ileocecal valve In case this is present and there is also a protrusion of the mucous membrane of the ileum through the valve, producing incompetence an easy route is offered for the intussusceptum It has been estimated that in the adult 35 per cent of the cases are caused by such tumors 3 Some factor producing hyperperistalsis This may be an obstructing band, a Meckel s diverticulitis, a typhoid or tuberculous ulcer, or any other inflammatory condition

Intracranial Hemorrhage in New-Born—Of 177 infants dying before or shortly after birth Greene says fifty-five died from intracranial hemorrhage (many with tentorial tears) The type of delivery in these fifty-five cases was breech extraction (three of these preceded by version) in eighteen, high forceps, seven, midforceps, six, low forceps four, cesarean section, three, normal labor—primiparous, seven, normal labor—multiparous, ten The first thirty five cases of intracranial hemorrhage in this series of fifty five were studied in detail In twenty-two cases of intracranial hemorrhage (from slight to severe in amount) there was no hemorrhage elsewhere in the body, although one child was definitely a "bleeder" In thirteen cases of intracranial hemorrhage (from slight to severe in amount), there was hemorrhage elsewhere in the body, especially in the suprarenals These thirteen patients with hemorrhage, both intracranial and elsewhere, were further studied to see whether there was any relation between the severity of hemorrhage in the cranium and the severity of the hemorrhage elsewhere in the body Of nine patients with slight visceral hemorrhage, five had extensive and four had slight cerebral hemorrhage Of four with extensive visceral hemorrhage, three had extensive and one had slight cerebral hemorrhage These figures do not show any tendency for slight cerebral hemorrhage to accompany slight visceral hemorrhage, but, as far as the figures go, a tendency is shown for extensive cerebral hemorrhage to accompany extensive visceral hemorrhage Hemorrhagic disease is probably not the cause of intracranial hemorrhage, in general, but in certain cases it must be an important factor, as in one case cited In this series of 177 autopsies, several cases were noticed in which newly born infants had intracranial hemorrhage, but apparently died from infections

Exophthalmic Goiter—DeCourcy asserts that most of the symptoms of exophthalmic goiter may be explained on the basis of an imbalanced sympathetic nervous system subjected to the action of some circulating sympathomimetic toxin Exophthalmos and the other ocular symptoms are due to stimulation of the sympathetic fibers by which the orbitalis and müllerian muscles are innervated Tachycardia results from stimulation of the cardio-accelerator centers in the cervical sympathetic ganglions The increased basal metabolic rate seems to be due to two factors, namely, the increased aeration in the lungs resulting from dilatation of the bronchial tubes and the direct effect of the hormone of the thyroid gland The tremor is produced by irritation of the sympathetic nerve fibers distributed to all voluntary muscles The goiter itself arises from hyperplasia of the thyroid gland However, there is no increase of colloid substance, iodine or thyroxin The bruit over the gland results from the partial compression of the common carotid artery by the enlarged organ With the single exception of increased basal metabolic rate, autonomic imbalance presents all the symptoms of exophthalmic goiter

Hernia as Industrial Problem—In an industry in which work is laborious 6 75 per cent of the workers with weakness in the inguinal region developed hernia Occupational hernia was proportionately more frequent among workers of southern European stock Clark reports that operative repair cured approximately three fourths of those so treated Over a period of several years, recurrence took place in approximately 25 per cent of those previously operated on

Canadian Medical Association Journal, Montreal

17 1415 1578 (Dec) 1927

- *Insulin and Mortality Rate from Diabetes Mellitus I M Rabinovitch Montreal—p 1415
- *Seasonal Variation of Antirachitic Effect of Sunshine A Brown and T F Tisdall Toronto—p 1425
- Evolution of Clinical Pulmonary Tuberculosis Early Diagnosis F M Pottenger Monrovia Calif—p 1429
- *Maternal Mortality in Canada H MacMurchy Ottawa Ont—p 1434
- Examination of Nervous System Interpretation of Findings F Brodie Vancouver B C—p 1438
- Cardiospasm C Clark Hamilton Ont—p 1445
- Diazo Reaction in Uremic Serum and in Normal Urine G Hunter and R C Montgomery Toronto—p 1448
- Duodenal Ulcer C S McVicar Rochester Minn—p 1451
- Duodenal Diverticula W J Cryderman Toronto—p 1455
- Immediate and End Results of Suprapubic Prostatectomy V C Hunt Rochester Minn—p 1462
- Certain Difficulties and Emergencies of Obstetric Practice W P Tew, London Ont—p 1468

Abortion Prophylaxis and Treatment H M Little and E Percival Montreal —p 1473
Certain Acute Pulmonary Complications of Puerperium Lung Abscess G E Learmonth Calgary Alta —p 1474
Conservative Treatment for Chronic Endocervicitis E M Blair Vancouver B C —p 1480
Pyelitis in Pregnancy L C Conn Edmonton Alta —p 1484
Study of 175 Cases of Epidemic Typhoid in Children in Montreal S J Usher Montreal —p 1486
Hereditary Abnormalities of Eye VII M T Macklin London Ont —p 1493
*Asthma and Eczema Treatment G A Campbell Ottawa Ont —p 1498
Treatment of Goiter C C Fatham Edmonton Alta —p 1503
*Anemia as Predominating Symptom in Malignant Disease E Eisen New York —p 1506
Carbon Dioxide Place in Anesthesia R M Waters Kansas City Mo —p 1510
Joint Tuberculosis R A Hibbs New York —p 1511
New Loop Tractor for Use in Gastro Intestinal Anastomosis W H Lang Vancouver B C —p 1516
Open Beauty Pin in Esophagus of Six Weeks Old Infant D H Ballon Montreal —p 1517
Denuded Surfaces Treated by Tannic Acid A B Walter Cambridge N B —p 1517
Case of Idiopathic Dilatation of Esophagus or Cardiospasm F A C Scrimger Montreal —p 1518
Pyelitis in Ptotic Kidney Associated with Focal Infection J W Auld Calgary Alta —p 1520

Insulin and Mortality Rate from Diabetes —Rabinowitch contends that regardless of any disease found at the time of death, if all patients who received insulin and who actually required it are divided into groups of those who employ it properly and those who do not, it will be found that by far the great majority die, not in spite of the use of insulin but because of the abuse of it The advice which should be given patients is obvious

Seasonal Variation of Antirachitic Effect of Sunshine — Brown and Tisdall assert that from the first of March till the middle of October the antirachitic effect of the sun's rays is much greater than during the other months of the year, the most valuable period of the day being between 11 a m and 1 p m except during the extremely warm weather when the earlier hours of the day would be more suitable Skyshine has approximately from 50 to 60 per cent of the value of sunshine From October to March, the antirachitic effect of the sun is so slight that the benefit to be derived is purely problematic and has yet to be determined for the human being The use of the special glasses is of value from March to June when the chemically active rays are very beneficial and the weather is too inclement for outside exposure The sun s rays definitely aid in digestion

Maternal Mortality in Canada —The maternal mortality in Canada for one year is given by MacMurchy as being 6 per thousand living births or 1,532 deaths In 727 cases, the mother s health had not been good In sixty-eight cases the mother was very poor and destitute In ninety-five cases, preexisting cardiac disease lessened the mother's chance of life, and in 190 cases, including fifty-nine of the above cardiac disease was given as a cause of death Ninety-six mothers had tuberculosis In nineteen cases, previous pregnancies had been too frequent and at too short intervals Sepsis was the cause of death in 418 cases Hemorrhage caused 357 deaths toxemias of pregnancy caused 344 deaths long and hard labor caused eighty-seven deaths Pernicious vomiting was the cause of death in forty-seven cases, phlebitis was a cause in twenty-two cases, nephritis in eighty cases Eclampsia was the cause of death in 195 cases In eighty-seven cases it was stated that the labor was long and hard, leading to exhaustion and shock in eighty-seven cases the cause of death was given as embolus in sixty-three cases shock was given as the cause of death Ectopic pregnancy occurred in thirty three cases Of the total number of pregnancies 349 were in primiparas and 963 were in multiparas In 110 cases the death of the patient occurred before labor In fifty-seven cases the death occurred in labor Forceps were used in 289 cases Pituitary extract was used in 327 cases, and in three of these it is recorded that rupture of the uterus occurred In 237 cases, a physician was not in attendance This number includes forty-eight, in which a midwife nearly always untrained was in attendance and in some of these forty eight cases the midwife was directly responsible for the death The absence of proper postpartum care especially of skilled nursing or even of household help was mentioned in six cases as the cause of death Of the 1,532 women who died 230 had prenatal care and 1,302 had not In 128 cases the physician was not called till labor had actually begun In the 230 cases in which prenatal care was given, there were forty in which the mother was responsible for the failure of prenatal care

Treatment of Asthma and Eczema —Cases of eczema due to timber wolf, corn silk, and orris root are reported by Campbell Desensitization of children suffering from asthma caused by egg and horse dander is a practical and satisfactory method of treatment Horse dander is probably the most important single cause of asthma in children but cases due to glue canary feathers, mustard hog hair and flaxseed are reported Asthma of bacterial or nonprotein origin is best treated by vaccine, but the results are not as spectacular as those seen in cases due to specific proteins Cases of recurrent vomiting due to egg and milk are reported Fatal cases from acidosis due to recurrent vomiting, which in turn is due to food hypersensitivity, are reported

Anemia in Malignant Disease —Some patients with cancer suffer more from the accompanying anemia than from any other symptom associated with malignant disease Eisen reports three cases and says that such patients may sometimes receive considerable alleviation of their symptoms from measures tending to the relief of their anemia particularly blood transfusion The danger of hemolysis of the donor s blood should be kept in mind, and tests for this possibility should be made beforehand

Journal of Bone and Joint Surgery, Boston

10 1 185 (Jan) 1928

Repair of Nerves and Tendons of Hand S Bunnell San Francisco —p 1
Disability and Cost of Industrial Fractures R N Gray San Fracisco —p 27
Articular Mechanism of Diarthroses T Walmsley Belfast Ireland —p 40
Second Type Arthritis as Exemplified in Shoulder Joint A L Fisher San Francisco —p 46
Relation of Surgical Pathology of Right Lower Quadrant to Arthritis R Smith Los Angeles —p 57
Surgical Lesions of Right Lower Quadrant in Patients with Chronic Deforming Arthritis R G Taylor Los Angeles —p 62
Early Motion in Treatment of Separation of Lower Femoral Epiphysis A S Griswold Bridgeport Conn —p 75
*Mechanical Action of Periosteum in Fresh Fractures B H Moore Chicago —p 78
*Physiology of Muscle Innervation Influence of Sympathetic System E G Martin Stanford University Calif —p 82
Easily Portable Convex Frame P C Colonna New York —p 88
*Dislocation of Head of Radius New Operative Procedure H Milch New York —p 89
Technic in Use of Bone Grafts in Cases of Nonunion F J Cotton Boston —p 94
Rickets of Lower Extremities Relation to Genu Valgum and Static Flat Foot C U Moore Portland Ore —p 96
End Results and Follow Up in Orthopedic Surgery W A Rogers Boston —p 104
*Fracture of Tarsal Scaphoid Mechanism E P Lehman and I H Eskeles St Louis —p 108
*Continuous Traction in Treatment of Spinal Conditions Notably Scoliosis C L R Lowman Los Angeles —p 114
*Late End Results in Ununited Fracture of Neck of Femur Treated by Bone Peg or Reconstruction Operation F H Albee New York —p 124

Action of Periosteum in Fresh Fracture —Moore directs attention to the fact that in transverse fractures the elastic pull of the periosteum as well as muscle pull is a factor in producing angular and overriding deformity It also tends to lock overriding fragments by its mechanical action under direct traction Further by its elastic action it tends to cause angular deformity if reduction is not anatomically perfect However when anatomically perfect reduction is obtained this elastic action of the periosteum tends to maintain it Therefore manipulation that will take advantage of these properties of the periosteum is advisable

Physiology of Muscle Innervation —Martin suggests that a muscle deprived of the opportunity to function actively through impairment of its upper neuron connections yet continuing to receive trophic' influences through the sympathetic system, might conceivably pass into a state leading to accentuation of its tonus, which is maintained by reflexes localized within itself Ramisection by removing the source of constant "trophic" stimulation, might enable the muscle to recur to a metabolic state better adapted to its enforced quiescence, a state in which tonus ceases to be exaggerated

Operation for Dislocation of Head of Radius—In the operation suggested by Milch, an attempt is made to restore the function of the torn annular ligament A fascial graft is cut in such fashion that while one part of it will function as a new orbicular ligament within which the head of the radius may freely rotate, the lateral extension will operate to provide a reenforcement to the injured external lateral ligament By appropriate tightening of the fascial sling so formed, it is possible to keep the head of the radius in contact with its normal articulation in the lesser sigmoid cavity of the ulna

Fracture of Tarsal Scaphoid—A case is presented by Lehman and Eskeles of fracture of the tarsal scaphoid from indirect violence with excellent functional result A study of the tarsus suggests that fracture of the scaphoid from indirect violence is not probable without ligamentous tear A possible mechanism of fracture is presented as follows (*a*) forced flexion of the foot, with resulting tear of the dorsal scaphoidocuneiform ligament (*b*) transmission of force in the axis of the foot driving the scaphoid against the upturned sharp inferior proximal angle of the middle cuneiform

Continuous Traction in Treatment of Scoliosis—The treatment outlined by Lowman consists of a sequential use of recumbency, traction, casts, braces, exercises and operations in accordance with the severity, the cause and position of the curves and the constitutional condition of the patient

Results of Operation for Ununited Fracture of Neck of Femur—The end-results in 146 cases of ununited fracture of the neck of the femur are reviewed by Albee Five patients were seen early, and were treated with the Whitman abduction spica with excellent result The results in thirteen cases had to be eliminated because of incomplete records In forty-two of the remaining 128 cases, the bone-peg operation was recommended, in fifty-three, the reconstruction operation Six patients of the former group refused operation, and nine of the latter, leaving a total of eighty patients operated on (thirty-six bone-peg and forty four reconstruction operations) In 90 per cent of the bone-peg operations, and in 75 per cent of the reconstruction operations, the results were excellent or good The interval between the time of operation and that of the last examination varied from a few months to fifteen years Function was usually good within six months after operation

Kentucky Medical Journal, Bowling Green

25 663 738 (Dec) 1927

Public Health in Kentucky D Healey Lexington —p 716
Who Is Responsible for Increase of Idiocy? H C Clark Falmouth —p 720
Diverticula of Upper Esophagus C G Lucas Louisville —p 721
Arteriosclerosis and High Blood Pressure S S Amerson Georgetown —p 725

Medical Journal and Record, New York

127 1 56 (Jan 4) 1928

*Psychologic and Medicolegal Aspects of Pernicious Anemia A G Hulett, East Orange N J —p 1
Senescence and Senility L Williams London —p 7
Methods of Exploration in Cardiology Diagnosis of Cardiopathies S D Baldovin New York —p 10
*Case of Hemochromatosis O Hensel New York —p 14
National Traits in Medicine with Special Reference to Jew H A Savitz Providence R I —p 16
Benacol in Treatment of Pruritus Ani I C Yeomans R V Gorsch and J L Mathesheimer New York —p 19
Uterine Cancer Is Outlook Better for Patient? W P Healy New York —p 21
Effect of Prenatal Care on Size and Health of New Born E V Davis, Chicago —p 24
Pyelonephritis in Pregnancy W S Pugh New York —p 27
*Relation of Obscure Abdominal Pain and Chronic Arthritis to Infection of Uterine Cervix C Mazer and M Sabel Philadelphia —p 30
Sacral Backache Caused by Sclerosed Arteries Supplying Female Genital Organs C L Larkin Waterbury Conn —p 33
*Effect of Calcium on Fertility and Pregnancy O Loew Munich Germany —p 35
Wonders of Obstetric Science as Related by Simon Goulart C G Cumston Geneva Switzerland —p 37

Psychologic and Medicolegal Aspects of Pernicious Anemia—Hulett is convinced that ample evidence is available from unquestionably competent observers to establish the premise that pernicious anemia has a great importance psychologically and medicolegally Its importance as a frequent cause of mental disturbance cannot be overstressed The alienist and the lawyer will do well to remember that a sufferer from pernicious anemia is presumably of unsound mind, particularly in the latter months of life and that, though he may have achieved an apparent arrest of cure of the anemic process, this fact does not discharge his mentality from suspicion Such a person may well prove not only untrustworthy in a responsible position of any sort but may even develop suddenly into a menace to society, becoming the author of untold difficulty and misery through his irrational acts There is really no limit to the possibilities presented by such a situation A uniform practice of making the presence of pernicious anemia a prima facie cause for retirement and careful observation would obviate many present day difficulties As in more than one instance mentioned by Hulett, the question of the mental competence of any given person admittedly suffering from pernicious anemia, in connection with contractual obligations, a deed, or a testament, is of paramount importance

Hemochromatosis—A case of extreme hemochromatosis in an alcoholic subject, aged 34 is described by Hensel The only history obtainable was that of a rather acute diabetes of five weeks' duration with acidosis The case is of interest in that the patient is one of the youngest on record, and that extremely high figures were obtained for iron in the liver No proof could be furnished that copper was the cause of the condition, except that the patient was definitely alcoholic It is quite possible that other toxic agents besides copper (from cooking vessels, etc) may lead to the extreme cirrhosis of the abdominal organs with the deposition of pigment which characterizes the disease

Relation Between Chronic Arthritis and Infection of Cervix—Mazer and Sabel recognize an etiologic relationship between infection of the uterine cervix and chronic arthritis They advise the use of the electric cautery, well applied, to rid the uterine cervix of infection by destroying the entire gland-bearing mucosa

Advantage of Combining Calcium Salts—Loew states that combining calcium lactate with sodium lactate in the form of the double salt of calcium sodium lactate represents a means not only of administering calcium in a most convenient form but also of securing the important factor of calcium retention and calcium assimilation The presence of sodium lactate exerts also a beneficial effect on the consistency of the feces, which assume often a high degree of compactness, when calcium lactate alone is administered

Medicine, Baltimore

6 419 550 (Dec) 1927

Effects of Complete and of Partial Removal of Liver F C Mann, Rochester, Minn —p 419
Nonspecific Therapy J L Miller Chicago —p 513

Military Surgeon, Washington, D C

62 1 144 (Jan) 1928

Women Nurses with Union Forces During Civil War J C Stimson and F C S Thompson —p 1
Transmission of Surra Among Equines R A Kelser —p 18
Reducing Cost of Antimosquito Measures in Control of Malaria G C Dunham —p 33
Renal Glycosuria Three Cases S U Marietta —p 39
Medical Service of Infantry Division Being Organized W N Bispham —p 54
Recurrence of Symptoms After Snake Bite H C Yarrow —p 73
Recollections of Some Old Army Medical Officers R S Lamb —p 77

Minnesota Medicine, St Paul

11 1 66 (Jan) 1928

Reminiscences of Neurologist C E Riggs St Paul —p 1
Treatment of Acute Empyema J M Hayes Minneapolis —p 16
Immobilization in Treatment of Pulmonary Tuberculosis E K Geer, St Paul —p 21
Physiology of Liver and Gallbladder F C Mann Rochester —p 25
Cholecystography B R Kirklin Rochester —p 28

Surgery of Gallbladder A Schwyzer St Paul—p 31
Acute Silent Infection of Maxillary Sinus in Relation to Acute Systemic Diseases C A McKinlay Minneapolis—p 36
Certain Aspects of Vertigo from Ophthalmologic Standpoint C L Oppegaard Crookston—p 39
Hospital Obstetric Records Over Six Year Period G P Dunne St Paul—p 43

New Orleans Medical & Surgical Journal

80 413 482 (Jan) 1928

Malaria L S Lippincott Vicksburg Miss—p 413
Visceral Pain T B Holloman Itta Bena, Miss—p 416
Double Empyema of Pleural Cavities J Q Graves Monroe La—p 420
Etiology of Measles C W Duval New Orleans—p 423
Diagnosis of Acute Osteomyelitis G A Caldwell Shreveport La—p 429
Appendicitis Complicating Pregnancy A P Heineck Chicago—p 436
Etiology of Pernicious Anemia M M Wintrobe New Orleans—p 446
Chronic Pancreatitis Cases J E Knighton Shreveport La—p 454
Removal of Bullet from Wall of Heart and Report of Stab Wound of Heart C W Allen New Orleans—p 458

Occupational Therapy and Rehabilitation, Baltimore

6 421 499 (Dec) 1927

Occupational Therapy from Viewpoint of Superintendent of State Mental Hospital C F Haviland New York—p 431
Development of Occupational Therapy in New York State Hospitals H M Pollock New York—p 439
Block Printing J R Bacon—p 445
Cardboard Loom L J Haas New York—p 451
Occupational Therapy and Hospital Industries W M Kenna Washington D C—p 453
Industrial Life of Blind in Central Europe D R Carmer New York—p 463

Philippine Islands M Association Journal, Manila

7 455 584 (Dec.) 1927

Progress of Sanitation in Philippines Especially in Manila E Hernando, Manila—p 455

Public Health Reports, Washington, D C

42 3179 3226 (Dec 30) 1927

Endemic Goiter Among School Children in Minnesota Oregon Colorado Montana Connecticut and Massachusetts and in Cincinnati Ohio R Olesen Washington, D C—p 3180
Tadpole of Spadefoot Toad Enemy of Mosquito Larvae M A Barber and C H King Washington D C—p 3189

Rhode Island Medical Journal, Providence

11 1 16 (Jan) 1928

Blood Pressure W E Preble Boston—p 1
Dentistry as Medical Profession Sees It E S Calder Providence—p 4

South Carolina M Association Journal, Greenville

23 535 558 (Dec) 1927

General Practitioner and Laboratory W G Gamble Jr Charleston S C—p 538
Uterine Hemorrhage G Thompson Inman S C—p 541
Study of 100 Deaths from Diphtheria in South Carolina During 1926 and 1927 J A Hayne Columbia S C—p 543
Cirrhoses of Liver L G Rowntree, Rochester Minn—p 549

West Virginia Medical Journal, Charleston

24 1 52 (Jan) 1928

Cardiac Arrhythmias V E Simpson, Louisville Ky—p 1
Treatment of Neurosyphilis C Pope Louisville Ky—p 15
Bone Graft Surgery J O Rankin Wheeling—p 18
Purulent Meningitides of Infancy G M Lyon Huntington—p 24
Some of Calamities That May Follow Attempts at Interruption of Pregnancy J E Cannaday Charleston—p 30
Operative Treatment of Hernia of Coal Miners with Living Sutures E B Henson Charleston—p 32

Wisconsin Medical Journal, Milwaukee

27 1 50 (Jan) 1928

*Treatment of Burns by Tannic Acid S J Seeger Milwaukee—p 1
Tuberculosis Claims Most Victims in Women National Tendency C A. Harper Madison—p 6
Neurasthenia Concept. P Bassoe Chicago—p 11
*Cardiolysis for Chronic Mediastinopericarditis Three Cases E S Smith St Louis—p 16
Diagnostic Problems L M Warfield Milwaukee—p 21
Gas Bacillus Infection Case A S White Rice Lake—p 22
Pyloric Stenosis Unusual Case R M Greenthal Milwaukee—p 24

Treatment of Burns by Tannic Acid—Seeger relates his experience in the treatment of burns with tannic acid according to Davidson's method The dressing is soaked with a 25 per cent aqueous solution of tannic acid, although solutions as dilute as 0 75 per cent and as concentrated as 5 0 per cent have been used in some cases described It is essential that the tannic acid solution be made up fresh just before use, because it deteriorates on standing with the formation of the far less astringent gallic acid For household use, it is easy to remember that four teaspoonfuls of dry tannic acid powder to one glass of water makes approximately a 2 5 per cent solution

Cardiolysis—Every case of disturbed compensation refractory to ordinary remedies, Smith says, should be considered as a potential case of chronic mediastinopericarditis Every case of ascites not ascribable to the more common causes of this condition should be carefully studied from the standpoint of adherent pericardium Fluoroscopy is a most valuable aid in the recognition of the condition as is also the electrocardiogram As soon as the diagnosis is established cardiolysis should be urged, as no medicinal treatment can afford results when a heart is embedded in the grip of extensive adhesions, while, on the other hand, the earlier the surgical procedure is resorted to the better will be the response of the cardial musculature to the relief thereby afforded Local block anesthesia should be the anesthetic of choice as shock, cardiac and pulmonary complications are thereby minimized

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FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below Single case reports and trials of new drugs are usually omitted

British Medical Journal, London

2 1215 1250 (Dec 31) 1927

Clinical Research by Family Doctor A M Ramsay—p 1215
Village Settlements for Consumptive P C Varrier Jones—p 1217
*Infarction of Heart R O Adamson—p 1219
Epidemic Encephalitis Associated with Parkinsonism Treated by Ultraviolet Rays H N Jaffe—p 1219
*Disseminated Sclerosis Rat as Possible Carrier of Infection I G H Wilson—p 1220
*Method of Draining Septic Uterus A R Hobbs—p 1223
Congenital Dextrocardia Without Transposition of Other Viscera Acquired Valvular Disease and Auricular Fibrillation D Krestin—p 1223
Unusually Large Ovarian Cyst H H Barnett—p 1225
Traumatic Rupture of Duodenum and Liver Subphrenic Abscess Recovery C J V Woodside—p 1225
Gangrenous Appendix in Strangulated Hernial Sac A Seaston—p 1225
Congenital Diaphragmatic Hernia D H Waldron—p 1226
Chronic Vinegar Poisoning D A Urquhart—p 1226

Infarction of Heart—Adamson thinks that this condition probably occurs more often than is realized It may be concealed under the vague term of 'heart failure" or "angina pectoris", or, in total error, some entirely different condition may be supposed to be present It is doubtless a common cause of sudden cardiac death also if uremia is excluded of those fugitive attacks of pericarditis which occur in elderly persons who recover but later on, die suddenly Such attacks may only exhibit a friction sound for a few days Recovery from definite cardiac infarction occurs after an illness of very definite kind with symptoms practically pathognomonic It is caused by embolism of the right or left coronary arteries, but more often by thrombosis, the gradual increase of which may have given rise to symptoms of cardiac inefficiency Infarction of the heart is always possible in the life history of those patients with high blood pressure, diminished cardiac reserve and arteriosclerosis with its symptoms in the brain lungs, stomach, kidneys or limbs (intermittent claudication) When cardiac infarction occurs in these persons, death either takes place at once or in a few hours, or a more or less typical illness is presented, followed by recovery, partial or complete

Disseminated Sclerosis Rat as Carrier—The occupations of 688 persons dying of disseminated sclerosis in 1925 have been investigated by Wilson and seventy-two patients have been interviewed with regard to their exposure to rat-infested water The observations of other investigators as to heavy incidence in agricultural workers and wood workers have been confirmed The incidence appears to be heavy also among painters, plumbers, molders and wool and cotton workers Clinical histories show some evidence in favor of the possibility that the infection of disseminated sclerosis is spread by rats and water

Draining Septic Uterus—Hobbs injects pure glycerin into the uterus, slowly, through a rubber catheter In from twenty minutes to half an hour, from 60 to 100 cc, or even more glycerin may be injected without causing the slightest discomfort to the patient This may be done twice a day In cases of chronic hemorrhage, as in chronic metritis and fibrosis uteri patients are given an anesthetic and the uterus is washed out alternately with alcohol and glycerin This is repeated for about a dozen times Subsequently in all cases, the uterus is drained for the succeeding few days

Heart, London

14 111 176 (Dec 21) 1927

Coronary Circulation in Relation to Cardiac Cycle G V Anrep F W H Cruickshank A C Downing and A S Rau—p 111
Innervation of Mammalian Capillaries by Vasoconstrictor Sympathetic Nerves K E Harris and H M Marvin—p 135
*Vascular Reactions of Skin to Injury X Intervention of Chemical Stimulus Illustrated Especially by Flare Response to Faradism T Lewis R T Grant and H M Marvin—p 139
*Histamine Like Substance in Skin Extracts K E Harris—p 161

Vascular Reactions of Skin to Injury—The conclusion that certain forms of physical stimuli provoke vascular reactions in the skin by releasing locally a chemical substance that acts directly on the vessels and nerve endings is reexamined by Lewis Grant and Marvin and substantiated by new evidence It is widened bv applying it to a variety of stimuli, including especially the faradic current The mechanism of the reflex flare following stimulation of the skin is further analyzed It is shown that it may be provoked from the subcutaneous tissues It is shown further that the sensory nerve paths, which ordinarily convey the reflex from skin area to skin area, take a subcutaneous and not a cutaneous course Observations on itching of the skin, associated with the triple response (urticarial response) are included, and this itching is ascribed to stimulation of the sensory nerve endings by histamine or an equivalent substance The sensory nerve endings that receive the stimulus responsible for the flare are known to be stimulated only by histamine introduced or by its equivalent released from the tissues It is suggested that the nerve endings in question are specifically adapted to this form of stimulus

Histamine-Like Substance in Skin Extracts—Harris states that alcoholic extracts of human skin contain a substance that flushes and wheals the human skin when punctured into it The same extracts contain a depressor substance, and produce contraction of the guinea-pig s uterus this depressor substance is not choline From this evidence, and from previous work on the lung and liver, it is concluded that the alcoholic extracts of human skin contain histamine Its amount in normal skin is estimated at about 10 mg per kilogram of tissue (or 1 in 100 000), the quantity varying somewhat for different regions of the body

Lancet, London

2 1377 1426 (Dec 31) 1927

Medical Education in Cork C Y Pearson—p 1377
*Two Cases of Trichinelliasis T L Hardy—p 1380
*Atrioventricular Rhythms E N Chamberlain—p 1383
*Dextrinuria Clinical Significance P J Cammidge—p 1386
Aural Systemic Infection R D Owen—p 1390
Effect of Anesthetics on Blood Iodine W Anderson and I Leitch—p 1391
Concurrent Appendicitis and Meckel s Diverticulitis A Cumming—p 1392
Case of Erection of Vermiform Appendix S A Lane—p 1392

Trichinelliasis—Two sporadic cases of trichinelliasis are described by Hardy, of a type sufficiently definite to admit of ready clinical recognition but not severe enough to be confounded with such conditions as enteric Diagnosis was confirmed by finding the embryos in the blood stream and in the muscles The source of the outbreak could not be traced, but its occurrence is to be attributed to the failure of the ordinary methods of cooking when dealing with large joints

Atrioventricular Rhythms—The close relationship of auriculoventricular rhythm and ventricular escape, Chamberlain thinks, justifies their inclusion under the common heading of atrioventricular rhythm A case of auriculoventricular rhythm is described, illustrating its occurrence occasionally during sinu auricular rhythm (ventricular escape), and the effect on it of atropine and digitalis in producing a continuous auriculoventricular rhythm of types II and III, respectively A suggestion is made for the treatment of the attacks of vertigo which are liable to occur Atropine would seem the rational drug to employ for the vertiginous attacks as it increases the rate of the rhythm, it is probable that these attacks are due to excessive slowing of the heart, similar to that of heart block

Dextrinuria—It is generally agreed that, if diseases of the pancreas causing deficiency of the internal secretion of the gland could be detected and dealt with in a prediabetic stage, the prospect of a permanent cure would be considerably increased Cammidge has found that dextrinuria invariably precedes the onset of glycosuria in such cases, often by months and sometimes by years, so that the discovery of its presence would seem to offer such an opportunity for commencing treatment before irreparable harm has been done The early diagnosis of defects of carbohydrate metabolism due to relative deficiency of the internal secretion of the pancreas affords even better chances of instituting radical treatment than the discovery of an absolute deficiency, since persistent glycosuria develops only when the pancreas is exhausted and an actual deficiency of its internal secretion occurs Dextrinuria arising from disturbances in the functions of the liver may apparently exist for many years without any definite signs of a diabetic condition developing although the not infrequent presence of levulose, pentose and similar reducing substances in the urine occasionallv lead to an incorrect diagnosis In some instances Cammidge has seen alimentary glycosuria develop as a sequel of dextrinuria due to hepatic insufficiency, but always in persons past middle life and it is rather significant that alimentary dextrinuria may be found in one or more of the young members of a family in which there is a history of glycosuria, usually of a mild type, occurring in old age

Oriental J Diseases of Infants, Kyoto, Japan

3 1 22 (Jan) 1928

*Artificial Feeding of Infants III Various Kinds of Sugar as Adjunct to Artificial Foods T Suzuki—p 1
*Effect of Roentgen Ray on Blood in Whooping Cough T Suzuki and S Kawashima—p 9
Clinical and Experimental Investigation of Lymphocytes in Whooping Cough M Fukushima—p 10
Specific Symptoms and Pathologic Findings in Infantile Measles S Kuraya—p 12
Chemical Analysis of Bacilli of Whooping Cough M Fukushima—p 14
Experimental Studies of Lymphocytosis of Whooping Cough Meningitis M Fukushima—p 15
*Kottman s Reaction in Infantile Tuberculosis T Akasawa—p 16
*Influence of Utraviolet Ray on Immune Body of Rabies J Takaya—p 17
Histologic Findings in Winkel s Disease K Tada—p 18

Artificial Feeding of Infants—Suzuki asserts that cane sugar is the best adjunct to dried milk, in all proportions dextrin-maltose comes next, and milk sugar comes last

Effect of Roentgen Ray on Blood in Whooping Cough—Suzuki and Kawashima assert that roentgenotherapy in whooping cough reduces the number of lymphocytes, ameliorates the cough spasm and also reduces the number of bacilli in the sputum

Kottman's Reaction in Infantile Tuberculosis—Akasawa applied the Kottman reaction in infantile tuberculosis and found that in the majority of cases in the initial stage of the disease the function of the thyroid was increased, though in a few rare cases it was decreased In the final stage of the disease, however, it is always diminished In cases of pleurisy, tuberculous abscess of the lymphatic glands and surgical tuberculosis, it is almost always diminished The function of the thyroid does not always coincide with the severity of the tuberculosis but it fluctuates occasionally The function of the thyroid has no influence on the velocity of sedimentation of red blood corpuscles in tuberculosis

Effect of Ultraviolet Ray on Immune Bodies of Rabies—Takaya asserts that the power of the immune serum of rabies is reduced by exposure to the ultraviolet ray

Bulletin Medical, Paris

41 1333 1360 (Nov 30 Dec 3) 1927

Treatment of Obesity P Blum L Bouttier and P Renault —p 1339
*Maternohemotherapy and Hereditary Syphilis Thorel —p 1341

Maternohemotherapy and Hereditary Syphilis —For several years Thorel has treated all cachectic infants with injections of maternal blood Usually, the general condition changed for the better, the weight increased and the dermatoses disappeared within a few days Most of these children were heredosyphilitics The blood of syphilitics seems to contain antitoxins

Paris Medical

63 421 436 (Nov 26) 1927

Diagnosis and Treatment of Dilatation of Bronchi E Sergent —p 421
Familial Fibroma R Gregoire —p 432
*Treatment of Gonococcal Arthritis and Other Gonorrheal Complications M Rodriguez —p 434

New Treatment of Gonococcal Arthritis and Other Gonorrheal Complications —Rodriguez has treated more than a hundred cases of gonorrhea with complications especially arthritis, by means of antidiphtheritic serum and has obtained excellent results Six illustrative cases are briefly reported The second was that of a *man who* had had gonorrhea for six months and had severe pain in the left scapula, which was red and swollen He was given 6 000 units of antidiphtheritic serum and the next day the pain had diminished Three days after the first injection he received 1 5 cc of toxin antitoxin That night there was an exacerbation of pain After four days, the pain ceased, and eight days after the injection the patient s condition was satisfactory

Presse Medicale, Paris

35 1409 1424 (Nov 19) 1927

Examination of Arterial Reactions with Pachon s Oscillometer G Billard —p 1409
Pathogenesis and Surgical Treatment of Meniere s Vertigo H Aboulker —p 1412
*Treatment of Postoperative Retention of Urine W Butureanu and T Burghele —p 1414

Treatment of Postoperative Retention of Urine —Using instillations of from 15 to 20 cc of a 20 per cent borated glycerin solution into the full bladder, Butureanu and Burghele obtained cures in 92 8 per cent of fifty-three cases of postoperative retention of urine As a rule, micturition occurred between five and fifteen minutes after the instillation

Progres Médical, Paris

54 1810 1840 (Nov 19) 1927

*Lead and Cancer P Girard —p 1817
Influence of Lead Intoxication on Gestation H Vignes —p 1817
Lead Treatment of Cancer P Duhail —p 1822
Dangers of Lead M L Lavedan —p 1828
Excretion of Lead by Normal Persons M Marmeaux —p 1831

Lead and Cancer —Girard used electric endosmosis in impregnating with metallic ions the living, vascularized tissue of tumors in rats Barium, strontium calcium, magnesium and copper ions caused a temporary arrest of tumor growth After a varying length of time, the tumor completed its development Iron and cadmium did not have a marked effect Lead ions caused, first, considerable hyperplasia and then retrogression The neoplastic tissue was gradually absorbed and a second graft did not take

54 1842 1888 (Nov 26) 1927

*Pseudosplenomegaly in Gastric Cancer M Léon Kindberg and R Garcin —p 1849
Neuroses and Neuropathic Syndromes H Codet —p 1853
Spread of Trachoma in France L Lortat Jacob —p 1853

Pseudosplenomegaly in Gastric Cancer —A case of gastric cancer of the plastic linitis type, situated on the posterior wall of the stomach, together with a large subjacent glandular tumor, resembled splenomegaly throughout its development It was only identified at operation, a few weeks later the patient died

54 2002 2052 (Dec 10) 1927

Acute Pancreatitis G Menegaux —p 2009
*Radiotherapy of Simple and of Exophthalmic Goiter M Joly —p 2017
Historic Note on Treatment of Tuberculosis M Michel —p 2031
Dynamogenic Effect of Activated Serum of Young Male Animals on Old Men C. Levassort —p 2040

Radiotherapy of Simple and of Exophthalmic Goiter —Roentgen ray treatment arrests a simple goiter and causes it to retrogress on the one hand by destruction of the new-formed cells and, on the other by excitation of the connective tissue The method of treatment is described in detail Joly brought about definite decrease in the size of four simple goiters In exophthalmic goiter the dosage is different The right and the left side of the neck and the region of the thymus are irradiated Usually five seances are given followed by a rest period of two months

Pediatria, Naples

35 1313 1344 (Dec 15) 1927

*Acute Endocarditis in the New Born G Macciotta —p 1313
*Tuberculin Skin Tests C Sorrentino —p 1329
Treatment of Congenital Equinus Varus M Abbate —p 1339

Acute Endocarditis from Streptococcus Enteritis in the New-Born —The first symptoms in the case described developed twelve hours after birth The feces soon became diarrheal and were mixed with blood and pus Fecal examination yielded streptococci Signs of septicemia and endocarditis appeared gradually A blood culture on the ninth day of the disease showed streptococci, which caused a lethal septicemia on inoculation into a guinea-pig The baby died twelve days after birth The organisms must have entered the alimentary tract immediately after delivery

Skin Tests with Human, Bovine and Avian Tuberculin —Sorrentino tested 400 children with human bovine and avian tuberculin In 185 with clinical signs of tuberculosis 60 per cent 49 2 per cent and 3 8 per cent respectively, were found positive to the three several tuberculins The corresponding figures for the 215 without clinical signs of tuberculosis were 21, 33 2 and 8 per cent Of 156 children found positive to human tuberculin, 75 6 per cent were equally positive to bovine tuberculin Of 215 children found negative to human tuberculin, 18 6 per cent proved positive to bovine tuberculin In testing with the several tuberculins one must distinguish the specific reaction to the tuberculin belonging to the strain that caused the infection and the general group reaction to the other tuberculins The first appears earlier and is more intense

Policlinico, Rome

34 1813 1848 (Dec 12) 1927 Practical Section

*Typhoid Reinfection N Sette —p 1813
Cyst of Lung After Bullet Wound E Basso —p 1817
Abscess of Lung After Puerperal Fever D Clemente —p 1821
Ingestion of Acids and Iodides During Treatment with Alkali L Settimj —p 1822

Possible Reactivation of Latent Typhoid Fever by Putrid Gases —In a patient who worked in sewers four successive attacks suggestive of typhoid fever developed in the course of five months All blood cultures and serum tests proved negative the first three times The fourth time a blood culture was positive for typhoid Sewer gas Sette believes, by its irritating properties, may change the condition of body fluids and even inhibit the usual serum reactions In some cases a negative blood culture may be followed by a positive result after an injection of foreign protein or other substances

Riforma Medica, Naples

43 1057 1080 (Nov 7) 1927

*Treatment of Osteomalacia V R Perretti —p 1062
*Antigen for Wassermann Test G Lanteri —p 1066

Parathyroid Extract in the Treatment of Osteomalacia —In a case of osteomalacia, in a woman aged 46, treatment by mouth with parathyroid extract was followed by improvement of the calcium metabolism, a general sense of well being subsidence of the pains in the bones and almost normal gait Treatment lasted a month

Phenol Alcohol as an Antigen for the Wassermann Test —In 300 serums Ninni-Molinari s phenol alcohol antigen yielded results identical with those obtained with the cholesterol alcoholic guinea-pig heart antigen and the Meinicke turbidity reaction After dilution in sodium chloride solution (1 9), the antigen should be allowed to stand fifteen minutes before placing it in the tubes The formula requires 1 cc of absolute phenol, liquefied by heat, in 49 cc of 96 per cent alcohol

Bol y Trab de la Soc de Cirugia de Buenos Aires

11 863 883 (Nov 23) 1927 Partial Index

Ectopic Testes R A Rivarola and A C Cucullu—p 877

Treatment of Ectopic Testis—Out of sixty patients with undescended testes, the condition was bilateral in 32 per cent, on the right side in 50 per cent and on the left side in 18 per cent Of the seventy-nine testes involved, 91 per cent had an external inguinal 6 per cent an internal inguinal and 3 per cent an intra-abdominal location In seventy-one, the operative result was excellent in fifty-one, good in nineteen, fair in one Hernial sacs were found in 45 per cent Including twenty-eight previously reported cases, the series embraces eighty-eight cases treated successfully

Vida Nueva, Havana

20 333 504 (Dec 15) 1927 Partial Index

Splenomegaly in Children A Aballi—p 333
Treatment of Congenital Syphilis in Infants T Valledor—p 383
*Large Stone in a Child T Valledor—p 414
Pneumococcic Septicemia in Children A Castellanos—p 423
Value of Therapeutic Serums A Castellanos—p 464

Splenic Enlargement in Children—Among 7,200 children 470 had an enlarged spleen The most common primary conditions were syphilis, 170, tuberculosis thirty-four, malaria, thirty, intestinal parasites, thirty celiac disease twelve, typhoid, eleven Anemia and hemolytic jaundice are not very common in Cuba In most of eleven cases of von Jaksch's anemia syphilis was a factor Among so-called pseudoleukemias the most common in Cuba is Hodgkin's disease, lymphosarcoma comes next and aleukemic lymphomatosis last The splenomegalic rate furnishes an indirect index of disease in any district or town

Large Bladder Stone in a Child—In a child, aged 4, the stone removed from the bladder was as large as a hen s egg and weighed 39 Gm

Archiv fur Kinderheilkunde, Stuttgart

82 241 320 (Nov 11) 1927

*Citric Acid Milk in Diet of Dysenteric Children S Meyer—p 241
*Sugar Treatment of Nephritis in Children W Hirschfeld—p 245
Primary Tuberculosis of Skin F Goebel—p 257
*Child s Appendix in Roentgenogram J Siegl—p 262
*Polyarthritis Deformans in Children W E Jolkver—p 273

Citric Acid Milk in Diet of Dysenteric Children—Meyer recommends the use of citric acid milk in the treatment of dysentery of infants She prepares it by boiling whole milk for five or ten seconds then the milk is cooled quickly in cold running water Next 5 Gm of powdered citric acid and the proper amount of sugar are added for each liter of milk, the mixture is stirred constantly so as to make a very fine curd Each liter of this milk has a caloric value of 850 to 900 The acid content is constant p_H 4 4 to 4 5 The milk is given with rice gruel The use of this milk has been wholly satisfactory

Sugar Treatment of Nephritis of Children—Hirschfeld found this treatment of value only in cases of nephritis with uremia or in which uremia was imminent No effect on the albuminuria or hematuria attributable to the sugar was noted

Child's Appendix in Roentgenogram—Siegl asserts that filling of the appendix with barium may occur not only when it is inflamed or diseased but also when surrounding structures are similarly affected Therefore this roentgenologic finding is not pathognomonic of disease of the appendix

Polyarthritis Deformans in Children—Jolkver directs attention to the fact that in all cases of chronic disease of joints an inquiry into the functioning of the thyroid should be made He speaks of thyrogenous arthritis Arthritis deformans in children is said to be identical with the same disease in adults

Archiv fur klinische Chirurgie, Berlin

148 1 790 (Oct 26) 1927 Congress Number Partial Index

New Viewpoints in Preoperative and Postoperative Treatment of Patients F Rost—p 287
*Operation for Embolism of Pulmonary Artery A W Meyer—p 315
*Surgery of Pancreas V Schmieden and W Sebening—p 319
*Surgery of Pancreas G von Bergmann—p 388
Benign Solid Tumors of Pancreas H Haberer—p 398
Modern Status of Joint Surgery E Payr—p 404
Treatment of Bronchial Asthma by Paravertebral Rib Resection Voelcker—p 522
Venous Air Embolism Experimental Study S Frey—p 536

Operation for Embolism of Pulmonary Artery Successfully Performed—The author has operated in two cases One patient recovered completely The second recovered from the operation but succumbed twenty-six days later to a new embolus His technic, practically the same as that suggested by Trendelenburg, was as follows The second and third ribs were resected subperiosteally for a distance of from 10 to 12 cm The pleura was not injured An incision was made into the pericardium and enlarged with the fingers until the pulmonary artery was seen The latter was gently constricted with a rubber tube and incised longitudinally for 1 5 cm Blackish blood and some emboli escaped It is well to allow considerable blood to escape as that relieves the right heart Next the constrictor was tightened and a Trendelenburg embolism forceps was passed into the right branch of the pulmonary artery The instrument was introduced three times Next, the incision was compressed with the fingers and the constriction released for a few seconds to allow blood to flow through the artery Once more the artery was constricted and the left branch was cleared of emboli, then once more digital compression was applied to the edges of the incision and the constriction was released The constrictor was again tightened, the edges of the incision were raised with the fingers, a vessel clamp was applied, and the constriction was released The edges were carefully coaptated with interrupted sutures Closure of the pericardium followed

Surgery of the Pancreas—Schmieden's statistics, embracing the postwar period, include 1,510 cases of pancreatitis The steady increase in the number of cases is explained by improvement in the knowledge of symptoms of acute hemorrhagic pancreatitis as well as by the tendency of modern surgery to operate early in cases of acute abdominal conditions Seven hundred and ninety-seven cases occurred in fat persons However, there were 175 typical asthenic individuals Contrary to the old belief the disease occurred more frequently in the female The ratio between the sexes was 64 9 34 4 The more frequent occurrence of gallstone disease in women is a probable explanation Children were not exempt Out of ten, four had concomitant bile tract disease Newer studies indicate that mild pancreatitis is rather frequent Such cases may heal spontaneously Schmieden favors early operation as well as operating when in doubt The mortality in nonsurgically treated cases is 95 per cent Shock should never be considered a contra-indication to operation The best approach to the gland is a transperitoneal one through a slit in the gastro colic ligament In all cases the peritoneal covering and the capsule proper should be divided Areas of softening are invaded with the finger The substance itself may be incised It is most important to wall off the organ and place drains on all sides so as to take care of the exudate At this stage the bile tracts should be examined carefully and necessary surgical procedures performed if the patient s condition permits The mortality in cases treated by operation was 51 per cent Continuous intravenous infusion of dextrose with simultaneous administration of insulin in the preoperative period or for several days after the operation, seemed to exert a beneficial effect

Surgery of the Pancreas—Autodigestion by its ferment is the essence of pancreatitis The presence of bacteria is not essential Acute necrosis of the pancreas has been produced experimentally in dogs by injecting bile and oil into the pancreatic duct and ligating it Preliminary administration of trypsin produced a sort of immunity in these animals He calls attention to so-called 'left-sided' symptoms as being diagnostic of mild attacks of pancreatitis in the absence of severe symptoms These are a sense of constriction in the left side, pain which radiates to the left shoulder, to the pelvis, to the leg, simulating sciatica, or which is felt in the back in the area of the eighth to the tenth dorsal segments All these, in the absence of dramatic symptoms, suggest disturbances of the pancreas The proximity of the pancreas to the solar ganglion explains the wide range of the radiation of pain Increase of diastase in the urine is next in importance Absence of trypsin in the duodenal contents speaks for obstruction of the pancreatic duct or for loss of function He believes that these mild attacks play an important role in the genesis of pancreatic diabetes Perigastritis, periduodenitis, and signs of residual inflammation in the lesser peritoneal cavity point to the frequency of mild attacks of pancreatitis Excessive functional activity of the organ is a factor in the severity of an attack Even in mild attacks he prescribes total abstinence from food for the first three days and then a strict carbohydrate diet A causal relationship between obesity, pancreatic attacks and gluttony is probable Not alone cholecystopathies, but dyskinesia of the bile tracts, play an important etiologic role He reminds the surgeon that the gallbladder, besides possessing a bile condensing function acts as a regulator of pressure in the extrahepatic bile ducts Bile may enter the pancreatic ducts, causing damage, and, on the other hand, pancreatic secretion may enter the bile ducts, causing disease of the bile ducts, gallbladder and of the liver itself A trypsin therapy may be worked out in the future which will immunize predisposed individuals and those who have had mild attacks against the acute severe hemorrhagic attack

Deutsche medizinische Wochenschrift, Berlin

53 2057 2106 (Dec 2) 1927

Increasing Rarity of Diagnosis Organ Neurosis G von Bergmann —p 2057
*Extrapleural Thoracoplasty L Brauer —p 2060
Choice of Anesthetic V Schmieden and W Sebening —p 2062
Radium Treatment in Gynecology H Eymer —p 2069
*Origin of Senile Cataract Birch Hirschfeld —p 2072
*Disturbances of Hearing and Equilibrium in Mumps O Voss —p 2074 C en
Attempts to Infect the Llama with Syphilis E Hoffmann —p 2076
Modern Treatment of Diabetes in Childhood H Kleinschmidt.—p 2076
Treatment of Pernicious Anemia with Insulin J Neuburger —p 2078
Examination of Psychiatric Patients M Rosenfeld —p 2079
Mode of Action of Various Alkyl Arsinic Acids H Fitz —p 2082
Fattening Treatment with Synthalin R F Weiss —p 2083
Ovarian Transplantation R Schreiner —p 2084
Stethoscope with Extra Pieces to Avoid Transmitting Infection Kirschstein —p 2084
Fall in Birth Rate and Infantile Mortality Prinzing —p 2087

Extrapleural Thoracoplasty in Treatment of Unilateral Pulmonary Tuberculosis—Brauer advises that his extensive thoracoplasty should be done in one stage, if possible, at most in two with an interval of not longer than four weeks The ribs are divided as close as possible to the transverse processes The periosteum is retained Particular care must be taken to spare the muscles of the back, the tendons must not be torn from their insertions With correct technic he asserts, the operation does not result in deformity While complete collapse should be obtained, the spinal column must remain straight and the function of the muscles of the shoulder girdle and back must be undisturbed

Light Rays of Short Wave Length and Senile Cataract—Birch-Hirschfeld fails to find support for the theory that senile cataract is caused by absorption in the lens of light rays of short wave length

Disturbances of Hearing and Equilibrium in Mumps—The cause of these disturbances, which occur more frequently in older children and in adults, Voss sees in the serofibrinous meningitis that frequently accompanies the infection

Munchener medizinische Wochenschrift, Munich

74 1993 2044 (Nov 25) 1927

*Modern Surgery of Carcinoma of Rectum V Schmieden —p 1993
Modern Methods of Determining Speed of Arterial Circulation M Hochrein and R Meier —p 1995
Determination of Condition of Heart and Diagnosis of Cardiac Weakness P Martini —p 1998
Delivery with Contracted Pelvis H Sellheim.—p 2001
Infant Feeding L Langstein —p 2004 C td
Loss of Appetite Abdominal Pain and Vomiting in Childhood J Brock —p 2006
*Habitual Hawking and Laryngitis M Nadoleczny —p 2009
Physician s Thoughts on Medicine Eternal Verities A Bier —p 2011 C td
*New Method of Increasing Differential Diagnostic Certainty in Gallbladder Roentgenoscopy A Grebe —p 2016
*Action of Chlorophyl in Arteriosclerosis E Bürgi —p 2019
Mixed Vaccines in Treatment of Gonorrhea H Loeb —p 2020
Intuition in Medicine H Kerschensteiner —p 2021
Early Diagnosis of Bleeding from Meningea Media A Krecke.—p 2023

Modern Surgery of Carcinoma of Rectum—Schmieden writes for the general practitioner, to secure his cooperation by removing prejudices and informing him as to the latest views on the subject Carcinoma of the rectum as well as all adenocarcinomas of the large intestine, has a worse reputation than it deserves The number of permanent cures that the modern (radical) operator can report is much larger than is in general believed But these results are obtained only when, as in surgery of the breast the entire organ, with the entire first layer of regional lymph glands and including all the connective tissue layers belonging thereto, is removed The operation should not be undertaken by any surgeon who has not ample opportunity for practice in it He advocates the abdominosacral, radical operation in one stage as the method of choice for patients able to withstand the large operation He does not favor the preliminary establishment of a artificial anus as a routine measure An advantage of the abdominal method lies in the possibility that it affords of palpating the liver for metastases before proceeding with the radical operation He regards this as of great importance If the hepatic metastases are small and it is certain that the radical operation can be easily performed, it may still be carried out The advantage to the patient, though only temporary, will be considerable Since the great majority of all carcinomas of the large intestine, including the rectum originate in polypi, these growths should be sought for and included in the operation This may necessitate the removal of the entire sigmoid flexure and of the entire gland-containing mesosigmoid, sometimes with segments of the bladder or uterus He considers that the anxiety over the distress caused by an artificial anus is frequently exaggerated With few exceptions, he finds complicated plastic operations unnecessary The practitioner should endeavor to dissipate the spector of the artificial anus as known to the laity, since it often results in delaying the operation and even the preliminary examination With the abdominosacral operation, the high-seated rectal carcinoma is as operable as the low seated

Habitual Hawking and Chronic Pharyngitis—Nadoleczny maintains that many cases diagnosed as chronic pharyngitis started in neuroses His patients fell into two main groups those whose profession required them to use the voice a great deal and women and girls of all ages The disturbance was frequently first noticed after straining the voice or after taking cold, i e occasions that fixed the attention on the throat In another group the throat symptoms appeared after times of excitement or anxiety The morbid attention to the throat results in hawking, this by a vicious circle, results in increased secretion of mucus and in the local phenomena of inflammation

New Method of Increasing Differential Diagnostic Certainty in Gallbladder Roentgenoscopy—Grebe's experience was that artificial irritants as well as pathologic irritations of various sorts even those originating outside the gastro-intestinal canal and at a distance from the biliary tract, prevented the obtaining of clear gallbladder shadows in the roentgenogram Preliminary administration of atropine overcame this difficulty In the healthy person a good gallbladder shadow can usually be obtained without this aid, it is in sick persons with a healthy gallbladder that atropine or similarly working remedies is of value in opposing reflex influences on the extrahepatic biliary tract Grebe used the method in twenty cases with satisfactory results

Action of Chlorophyl in Arteriosclerosis—In fifteen cases of arteriosclerosis without valvular defect, Burgi has seen the cardiogram approach normal after administration of chlorophyl In most cases there was also a fall in the blood pressure In three aged patients, the heart curve and the blood pressure showed little change, but these patients also improved in their general condition He recommends small doses Only extracted chlorophyl is effective

Wiener Archiv fur innere Medizin, Vienna

14 353 536 (Oct 10) 1927

Dissociation of Respiration Hiccup and Its Relation to Respiration E Rechnitzer —p 353
*Blood Transfusion in Thrombopenic Purpura H Krasso —p 377
*Irregular Ventricular Tachycardia R Fischer —p 405
*Insulin and Blood Pressure. R Strisower —p 429
Cerebral Oligopnea L Hess and E Pollak —p 435
Intraventricular Conduction Disturbances D Scherf —p 443
Peptidase Determinations in the Sick L Bohmig —p 463
Disturbance of Physico Chemical Regulation in Renal Insufficiency Treatment O Klein —p 475
*Quantitative Determination of Gastric Function P Mahler and Z Stary —p 491
*Individual Clinical Status of Many Subfebrile Conditions A Edelmann —p 505
Experimental Test of Oral Administration of Insulin W Lowenstein and O Merdinger —p 523

Value and Mechanism of Action of Blood Transfusion in Thrombopenic Purpura —In the first of the two cases of thrombopenic purpura reported by Krasso the patient was given a blood transfusion of 500 cc by the Percy method The immediate general effect was good and the number of thrombocytes was greatly increased The second case was one of hemorrhagic diathesis, at first expressed only by prolonged genital hemorrhages after a labor and leading after about six months to an extensive purpura involving the skin and mucous membranes The patient was given a transfusion of 450 cc of blood The behavior of the thrombocytes and that of the erythrocytes in these two cases indicates that the effect is one of simple substitution in which the donor's blood brings to that of the recipient blood elements which it lacks, in forms capable of functioning

Irregular Ventricular Tachycardia — One of Fischer's patients had had paroxysmal attacks of ventricular tachycardia, which lasted from a few minutes to several days In the ventricle there was regular allorrhythmia, which started from two centers The auricular rhythm was unaffected Auricular vibration was observed once The dissociation between the beat of the auricle and that of the ventricle brought about pulse inequality and deficiency Between attacks, ventricular extrasystoles were noted, which appeared to be interpolated and resulted in marked extension of the conduction time At necropsy an aneurysm of the heart through closure of the descending branch of the left coronary artery was found This was in causal relation to the tachycardia Cardiac arrhythmias in paroxysmal tachycardia are generally caused by the activity of several foci of inflammation The dissociation during the attacks is attributable to an impaired conduction of stimulus because of extrasystoles The sphygmographic records, as well as the electrocardiogram, are valuable for differentiating the forms of tachycardia

Insulin and Blood Pressure —Strisower examined the effect of insulin on blood pressure and blood sugar in a large number of ambulant patients with hypertension The cases included hypertension in diabetes, hypertension without renal change (essential hypertonia) and hypertension in renal disease The greatest diminution of blood pressure after insulin was found in the first group although the hypertension was not always very great The decrease in blood sugar was considerable but did not run parallel to the fall in blood pressure Fifteen patients with hypertonia showed the same characteristics, except that the fall in blood pressure after insulin was less No parallelism in the effect of the pancreatic hormone on blood pressure and on blood sugar could be discovered The high average of the blood sugar in patients with hypertonia is noteworthy Although the blood pressure values were highest in seven patients with chronic nephritis, the result of the administration of insulin was less marked than in normal subjects The blood sugar fell about 35 mg while the blood pressure fell not at all or about 5 mm Hg The author thinks the most probable explanation of the action of insulin on hypertension is that the hormone of the pancreas exerts a general effect just as do solution of pituitary and the principles of other glands of internal secretion

Quantitative Determination of Gastric Function —Three cases of anacidity, six of hypacidity four of normal acidity and three of hyperacidity, were studied by Mahler and Stary In all the cases but one, the test breakfast (dextrose solutions) and the histamine injection were given simultaneously Although 1 mg was given, there were never any by-effects There followed a rise in total chlorine secretion of about 82 0 per cent and of total hydrochloric acid secretion of about 116 per cent This rise is chiefly caused by an increase in the concentration of the secretion, rather than in its amount The average rise in the chlorine concentration, in 178 single determinations, was about 41 per cent of the parallel value in the standard test, the increase in the peak value was about 26 per cent of the parallel value in the standard test The hydrochloric acid concentration rose about 85 per cent, the peak value about 86 per cent The increase of hydrochloric acid secretion in the histamine experiments amounted on the average to 272 mg of chlorine, which corresponds to a hydrochloric acid content of 77 cc of a tenth normal hydrochloric acid solution The greatest rise observed amounted to 736 mg of chlorine or 207 cc of a tenth-normal hydrochloric acid solution Quantitative chlorine indexes show a difference in rise according to the acidity Those with hyperacidity show the least increase, and often a fall in the quantitative chlorine index, those with hypacidity show the greatest increase, while those with normal amount of acid are in the middle In regard to the course of the rises in concentration following injection of histamine the following law was demonstrated The maximum acid concentration precedes the maximum chlorine concentration the chlorine index reaches its peak before either

Individual Clinical Status of Many Subfebrile Conditions —In a series of about thirty-five cases, about twenty-five presented subfebrile temperature general fatigue hypochromic anemia relative lymphocytosis Distinct eosinophilic bodies similar to protozoa could be demonstrated, which resembled in some respects piroplasma, in others malaria plasmodia This disease picture denotes chronic infectious anemia The other cases in the series which presented a characteristic disease picture were associated with subfebrile temperature, but showed no eosinophilia Enclosed in the erythrocytes were bodies which stained by the May-Giemsa method and resembled diplococci or cocci morphologically

Zeitschrift fur d ges Neurol u Psychiat, Berlin

111 1 332 (Oct 28) 1927

*Pathogenesis and Treatment of Raynaud s Disease J Borak—p 1
Embryonic Postures in Mental Diseases A K Lentz —p 17
Poems of a Schizophrenic O Hinrichsen —p 24
Psychologic Evaluation of Telepathic Processes S Bernfeld —p 49
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Thought Shunning Blocking and Classification Schizophrenic Thought Disturbances H Burger —p 107
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Histopathology and Pathogenesis of Wilson Pseudosclerosis Group R Rotter —p 159
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Peculiar Extrapyramidal Motor Attacks I N Filimonoff —p 251
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Blumenthal s Reaction with Cerebrospinal Fluid in Syphilis of Central Nervous System B N Sserafimov —p 270
Neurologic Picture of Mercury Poisoning A E Kulkow —p 274
Actogram as Clinical Sleep Control E Guttmann —p 309
Alterations in Hippocampus Major in Apoplectic Cerebral Hemorrhages K Neuburger —p 325
*Tuberculosis as Cause of Death in Schizophrenia Manic Depressive Insanity and in Average Persons L Wolfer —p 532

Pathogenesis and Treatment of Raynaud's Disease —The pathogenic significance of the bone changes confirms the hypothesis that Raynaud's disease must be treated as a disorder of spinal cord origin Borak believes that an increased activity of certain spinal cord centers is the cause of the disease The roentgen-ray treatment of those portions of the spinal cord which supply the diseased extremities gave definite therapeutic results in nine cases, six in the second stage, three in the first

Epilepsy and Alcohol —In his study of 2 000 epileptics, 1 100 men and 900 women, Kuffner found drunkenness in the family history in 61 per cent Only about 30 per cent of the patients developed epilepsy after the twentieth year and very many of these were not alcoholics before the disease appeared Among the 2,000 patients, 8 per cent of the men and 1 3 per cent of the women were listed as drinking to excess Increased sensitiveness to alcohol was found in very few cases

Zeitschrift fur Hygiene und Infektionskrankh , Berlin

108 1 257 (Oct 24) 1927

*Bactericidal Power of Bowel, Its Relation to Typhoid Infection W Lowenberg —p 1
Production of Antigens by Means of Bacteriophage Lysins P Maslakowetz and S Kasarnowsky —p 13
Purification of Smallpox Vaccine with One Per Cent Phenol N Goschanskaja —p 23
Disinfection of Water with Chlorine Solution A Muller —p 27
Development of Club Formations in Ringlike Arrangement Around Dead Tubercle Bacilli Tissue Reaction Genesis of Actinomyces Formations K Meyer and E Mayer —p 38
*Presence of Paratyphoid B and Paratyphoid Like Strains in Organs of Recently Killed Healthy Animals H Bermann —p 54
Unity of Precipitinogen and Antitoxin Binding Substance in Diphtheria Toxin E Hoen L Tschertkow and W Zipp —p 61
*Spreading of Micro-Organisms in Dust Especially Influenza Bacilli B Lange and E Jochimsen —p 66
Antibody Formation in Cerebrospinal Fluid of Rabbits After Suboccipital Injection of Antigens E Illert —p 90
Bacteriology of Typhus E Rix —p 103
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Ergographic Investigation of Extensor Muscles of Hands of Lead Workers L Schwarz and C Albrecht —p 162
*Scarlet Fever IV Streptococci in Desquamation of Convalescents and Surroundings of Patients H Deicher —p 167
Scarlet Fever V Variability of Scarlet Fever Streptococci U Friedemann H Deicher and L Abraham —p 181
*Change in Pathogenesis for Animals and in Toxicity of Scarlet Fever Streptococci Through Animal Passage U Friedemann and H Deicher —p 192
Influence of Scorbutus on Disposition to Infections P Schmidt Weyland and W Koltzsch —p 199
Are Specific Precipitate Substances of Three Pneumococcus Types Haptenes? O Schiemann and W Casper —p 220

Bactericidal Power of Bowel Its Relation to Typhoid Infection —Lowenberg has determined experimentally and clinically that the duodenal secretion is bactericidal for typhoid and dysentery bacilli It is suggested that during the existence of typhoid this power may be lessened or may even disappear Furthermore, some of these organisms that come from the biliary passages are carried through the small bowel so quickly that they escape the bactericidal action of its juices Gastro-intestinal disturbances interfere with the normal secretion—and under such conditions typhoid bacilli would pass through the upper part of the small bowel unharmed and find lodgment in the lymph patches further down Because of the frequent finding of typhoid bacilli in and on the tonsils in cases of typhoid attention is directed to the tonsil as the portal of infection

Presence of Paratyphoid B and Paratyphoid-Like Strains in Organs of Recently Killed Healthy Animals —Bermann found paratyphoid B bacilli in the muscles, organs and feces of six (3 7 per cent) of 162 recently killed normal pigs, cows, sheep and horses These bacilli were found most often in the liver

Spreading of Micro-Organisms in Dust, Especially Influenza Bacilli —The infectivity of dried pathogenic micro-organisms carried by dust is pointed out by Lange and Jochimsen, who made careful experimental studies in this field The dust on floors, clothing and handkerchiefs contains bacteria that retain their infectious power in an astonishing degree for a long time

Scarlet Fever Streptococci in Desquamation of Convalescents and Surroundings of Patients —Deicher confirms the statements of others that the desquamation of scarlet fever convalescents does not contain streptococci, however, hemolytic streptococci can be found on the tonsils of all convalescents Therefore, termination of quarantine should be determined by bacteriologic examination of the throat and tonsils rather than by cessation of desquamation Scarlet fever streptococci may always easily be found on the walls of the sickroom and on the bedding

Scarlet Fever Variability of Scarlet Fever Streptococci —Friedemann et al emphasize the fact that absence of hemolytic streptococci from the throat of scarlet fever patients does not preclude these persons from acting as carriers These streptococci show considerable variability in their toxin-forming power They may lose it—but they also regain it very easily under appropriate conditions

Change in Pathogenesis for Animals and in Toxicity of Scarlet Fever Streptococci Through Animal Passage —Friedemann and Deicher found that the virulence of the Dick strain of scarlet fever streptococci was not increased by animal passage whereas that of strain 77 and the Kattner strain was markedly increased The toxicity of strain 77 was also increased whereas the Kattner strain lost its toxicity entirely The authors see in these observations an explanation of the failures to immunize—when detoxicated strains are used

Zeitschrift fur Kinderheilkunde, Berlin

44 235-412 (Oct 19) 1927

*Antirachitic Action of Milk Irradiated with Ultraviolet Rays in Carbon Dioxide Atmosphere K Scheer and P Rosenthal —p 235
Hemoclastic Widal Crises in Infants L O Finkelstein R A Wilfand and N A Spizyna —p 245
*Acute Aleukemic Lymphadenosis O Herz —p 255
Treatment of Gastric Atony in Infants and Children with Solution of Pituitary E Koenigsberger and W Mansbacher —p 265
*Treatment of Rumination in Infants W Mansbacher —p 277
*Investigations of Irradiated Ergosterol A Hottinger —p 282
Sugar Building Value (Carbohydrate Content) of Vegetables in Diabetic Diet R Wagner and J Warkany —p 322
Case of Multiple Annular Granuloma in Child L Lemez —p 328
Inflammations of Middle Ear in Infants F von Torday —p 339
Blood Picture in Otitis of Infants G Z von Rokay —p 347
Studies in Rickets O Jager —p 358
*Relationship of Congenital Osteoporosis (Craniotabes) to Ricket H Abels and D Karplus —p 365
Technic of Roentgenographic Procedures in Young Children L Freund —p 393

Antirachitic Action of Milk Irradiated with Ultraviolet Rays in Carbon Dioxide Atmosphere —By means of a special apparatus which is described Scheer and Rosenthal drive all the oxygen out of the milk by sending a stream of carbon dioxide through it The milk passes on into water-cooled chambers (not unlike the radiator of an automobile) and is exposed to ultraviolet rays This procedure is said to leave the milk free from the disagreeable taste that is characteristic of irradiated milk The taste now is a slightly acid one and rather pleasant Children do not object to it The daily dose of this milk is from 300 to 500 cc It is said to effect a cure in from four to six weeks

Acute Aleukemic Lymphadenosis —The case cited by Herz differed somewhat from the usual The patient was 7 years of age The family history was negative The child had had measles, chickenpox, whooping cough It suddenly became pale and lost its appetite and strength The anemia became so severe that a transfusion was done Later pyuria was noted and this symptom persisted until the end It was then that a diagnosis of pyonephrosis was made and operation was performed A greatly enlarged kidney resembling a solid tumor, was found On section it proved to be thickly infiltrated with small leukocytes The child made an uneventful recovery from the operation The duration of the illness was only about four months At the necropsy the liver, spleen kidneys and stomach exhibited more extensive involvement than the lymph nodes In general, leukopenia had been present constantly The number of leukocytes never exceeded 25,000 and they fell as low as 500 However there was no question as to the correctness of the postoperative diagnosis acute lymphadenosis

Treatment of Rumination in Infants —Mansbacher feeds his patients with gastric atony more solid food and reports good results He begins with milk porridge, and winds up with cream cheese, eggs, meat and bread He claims that the solid food inhibits reflexes ordinarily excited by the distention caused by liquid food, and it raises the tone of the gastric musculature, which, in turn, relieves the patient of the feeling of distention hence he has no desire to ruminate

Investigations of Irradiated Ergosterol —Hottinger reports his experimental and clinical observations on the effect of irradiated ergosterol on rickets Dogs recovered quickly Fifteen children with active rickets recovered in from four to six weeks The dose for infants is 1 mg daily, in cases of long standing 2 or 3 mg may be given A man, aged 25 with inveterate late rickets and tetany, benefited markedly from the treatment In a few weeks, the tetany disappeared and calcification was normal One early and two old cases of osteomalacia also yielded promptly Adults receive 5 mg of irradiated ergosterol daily Recurrences were noted when the treatment was discontinued too soon

Relationship of Congenital Osteoporosis (Craniotabes) to Rickets—Abels and Karplus assert that there is a relationship between these two clinical entities Whenever marked evidence of osteoporosis such as craniotabes or large fontanels and cranial sutures without any craniotabes, was present at birth, rickets almost invariably developed after the age of four months, whereas rickets never developed when there was no evidence of craniotabes at birth The authors regard these signs of insufficient ossification as being prerachitic Early resort to ultaviolet irradiation in these cases is advisable as a preventive measure against the development of rickets

Zentralblatt fur Gynakologie, Leipzig

51 2969 3032 (Nov 19) 1927

*Basal Metabolism and Specific Dynamic Action of Foodstuffs in Relation to Ovarian Function R Hornung —p 2971
Forceps Delivery in the Roentgenogram W Luttge —p 2975
Cause of Skin Emphysema During Delivery S Joseph and E Rabau —p *2978*
Insufflation of Carbonic Acid Gas and Injections of Lobelin After Operations H Hellendall —p 2980
Sacral Hernia of Pregnant Retroflexed Uterus After Amputation of Rectum and Resection of Sacrum E Fischer —p 2986
Intraperitoneal Hemorrhage from Myoma Threatening Life H Alexander —p 2988

Basal Metabolism and Specific Dynamic Action of Foodstuffs in Relation to Ovarian Function—In a study of 150 cases of various functional disturbances of the ovary Hornung found that the ovary did not exercise any regular direct influence on either the basal metabolism or the specific dynamic action of foodstuffs The cause of "ovarian amenorrhea and hypomenorrhea is to be found, in most cases in pluriglandular disturbance in which the pituitary appears to play a predominant role

Nederlandsch Tijdschrift v Geneeskunde, Amsterdam

71 1917 2024 (Nov 5) 1927 Partial Index

*Indications for Synthalin Treatment A H A Martens C H Koers and C De Jong —p *1918*
Giemsa Stain in Blood Preparations J Coenaes —p 1934
*Rapidity of Blood Formation in Severe Anemia with Various Diets C Elders —p 1939
Remarkable Swelling of Mucous Membrane of the Cheek P Plantenga —p 1944

Indications for Synthalin Treatment—Martens et al report the results of synthalin treatment in ten cases of diabetes They found that 1 mg of synthalin could effect the oxidation of from 0 5 to 3 4 Gm of glucose In two cases of acidosis it gave better results than insulin It is advisable to determine the hepatic function before starting treatment with synthalin In most of the cases the blood sugar curve did not run parallel with the bilirubin content of the duodenal juice When this is so, more importance should be attached to the bilirubin values for, in their experience, high bilirubin values in the duodenal juice bespeak good results from synthalin treatment Urobilin or increase of urobilinogen was almost never noted after administration of synthalin Emaciation followed synthalin treatment in some of their cases A cholagogue proved effectual in eliminating the by-effects of the treatment It does not appear to be necessary to the success of treatment that the gastric function should be in order, but it is important that the liver should be secreting well Even more than with insulin, treatment of diabetes with synthalin must be individual

Rapidity of Blood Formation in Severe Anemia with Various Diets—Elders publishes curves showing the rapidity of the hemoglobin increase in ten cases of pernicious anemia and of sprue with various diets He recognizes the value of liver, but believes that treatment with beefsteak, carried out thoroughly, gives as good results as are obtained with 250 Gm of cooked liver daily He recognizes a common etiology for sprue and pernicious anemia

Acta Pædiatrica, Upsala

7 1 190 (Nov 11) 1927

Application of Pregl s Micro Analysis to Determination of Free Phophates in Blood E. Jorpes and H Magnusson —p 1
Importance of Premature Birth in Etiology of Nervous and Mental Diseases of Infants C Looft —p 15
Study of Constitutional Anomalies in Children Especially Their Metabolism M Masslov —p 60
*Nasopharyngeal Infections as Cause of Dyspepsia Cholera Infantum and Septicemia in Infants H Ernberg —p 87
Calmette s Method of Vaccination Against Tuberculosis A Wallgren —p 120
Dick Reaction in Scarlet Fever L Abramson —p 138
*Prophylaxis of Rickets I Jundell —p 143
*Familial Congenital Myxedema N Johannsen —p 179

Nasopharyngeal Infections as Cause of Dyspepsia, Cholera Infantum and Septicemia in Infants—Investigations have shown that epidemics in large institutions for infants are more severe in extent and intensity in winter than in summer Closer analysis of this increased sickness during the winter shows it to be chiefly due to an increased number of dyspepsias nutritive disturbances and allied conditions and that these conditions are mainly caused by pharyngeal infections It is suggested by Ernberg that pharyngeal infection with its complications is far the most important and frequent cause of hospital epidemics the "hospitalismus of olden times as well as of similar conditions in the homes

Prophylaxis of Rickets—Jundell asserts that florid rickets can be cured and prevented in all cases by simple medicinal and dietetic treatment, even in the case of a child particularly predisposed to the disease He used cod liver oil almost exclusively

Familial Congenital Myxedema.—Johannsen reports three cases of congenital myxedema in siblings Although one died before the disease was recognized subsequent review of the symptoms and the mother's statements left no doubt as to the nature of the disease Two other children died from an unknown cause but the mother was convinced that they, too suffered from this disease

Finska Läkaresallskapets Handlingar, Helsingfors

69 877 976 (Nov) 1927

*Endocrine Etiology of Juvenile Cataract V Gronholm and C M Hohenthal —p 877
Elimination of Uric Acid by Kidney Elimination of Sodium Chloride and Water I Experiments with Epinephrine Atropine and Pituitary Preparation K Lindberg —p 899
Bilirubin in Epidemic Jaundice Z Eriksson —p 937
*Operative Treatment of Pylorospasm in Infants H von Willebrand —p 946

Endocrine Etiology of Juvenile Cataract—Gronholm and Hohenthal publish five cases of unusual type in patients aged from 13 to 32 with marked anomalies in body structure and in nature While the clinical diagnosis in the cases differed, clinically demonstrable disturbance in the glands of internal secretion and a rapidly developing bilateral cataract were common to all Sight was restored by surgical treatment, except in one eye in which postoperative complications set in On the basis of their study of these cases, they present a partly new classification of the etiologic groups in juvenile cataract

Operative Treatment of Pylorospasm in Infants—Von Willebrand reports on three patients two treated operatively with return to normal development He urges operative treatment in cases of pyloric tumor

Hospitalstidende, Copenhagen

70 *1061 1080 (Nov 10) 1927*

*Case of Rat Bite Fever N Petersen and K Overgaard —p 1061

Case of Rat Bite Fever—The diagnosis of rat bite fever (sodoku) in Petersen and Overgaard s case in a boy aged 14 is confirmed by the history, clinical course, typical primary lesion and temperature curve characteristic skin lesions and the prompt curative action of neoarsphenamin A febrile disorder with similar temperature curve was produced in a guinea-pig by infusion of blood from the patient Spirochetes were not found but several other typical cases without demonstrable spirochetes are cited The administration of neoarsphenamine in full doses is advised

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THE PREVENTION AND TREATMENT OF ASPHYXIA IN THE NEW-BORN *

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The first quarter of an hour after birth is the most dangerous period of life Its mortality is as great as that of any subsequent month No single discovery in medical science or improvement in practice could do more to save lives than would measures to avoid the losses that now occur within a few minutes after birth

There are probably no procedures in medical practice which are so nearly the same as those of the dark ages, or which have as yet been influenced so little by modern scientific knowledge, as those of the midwife or obstetrician in dealing with a nonbreathing new-born child Perhaps an excuse may be found in the statements still contained in textbooks of physiology and obstetrics regarding the questions why the fetus does not breathe in the uterus, and why it does start to breathe after birth This topic is generally discussed rather philosophically, and so might be left to the merely philosophical if it were not that some of the statements in these discussions afford a basis for most unfortunate results Thus, in such accounts stress is laid on the effects of exposure to cold air and the stimulation of the skin by contact with objects in the outside world Such a notion having been implanted in the mind of the obstetrician, it then becomes the basis for plunging the child into cold water or applying a vigorous spanking The new-born baby may be swung vigorously by the feet, squeezed and pulled and manhandled The results are frequently serious, and probably in rare cases may even involve fatal organic injury Such practices arise from the same mistaken idea as those of the so-called countershock treatment sometimes applied in the resuscitation of men partially drowned, electrically shocked, or asphyxiated by gas

In the application of countershock, the victim of the accident is dropped on the ground, sometimes from a height of several feet, beaten on the soles of the feet, and in other ways handled with extreme roughness in the belief that such irritation of afferent nerves may stimulate a renewal of breathing In fact, all that is really accomplished is that the patient has an added injury, sometimes severe, from which to recover Similarly, in rural districts the belief still obtains that a drowned person can be resuscitated by the use of a corn cob, the larger and rougher, the better It is fairly certain, however, that any person who breathes again after the application of such resuscitation apparatus would have breathed without it, he retains only an injured anus Essentially the same brutal procedure is sometimes even now resorted to by anesthetists as a means of stimulating a patient who has stopped breathing under anesthesia

Equally crude, ineffective and reprehensible is the treatment which ignorance and immemorial custom tolerate and even recommend for the nonbreathing new-born child Such practices in all fields of resuscitation, alike for adults and for infants, are based on essentially the same erroneous conception of the physiologic conditions producing breathing It is extraordinary how long such errors persist For more than ten years now every young medical student has heard an explanation of the chemical control of respiration by a professor of physiology and has then gone on to clinical work to forget it He adopts and applies the hoary errors of the clinic in regard to respiration

In answer to the theoretical question why the fetus in the uterus does not breathe, it is sufficient to say that the reason is that the conditions of the circulation and the exchange of the respiratory gases in the blood are such as do not stimulate the respiratory center Respiration does not occur because no chemical stimulus of sufficient strength develops in the blood and is brought to bear on the center [1]

After birth the infant breathes in response to the same stimulus and by the same mechanism as those which the modern physiology of respiration has shown obtain in adults, in children, and in all mammalian animals In all these, and in the infant no less, the maintenance and regulation of breathing depend on the carbon dioxide brought to the respiratory center in the blood Oxygen is requisite if the center itself is to be maintained in normal condition, and if the tissues are to produce carbon dioxide, for deprivation of oxygen necessarily decreases the production of carbon dioxide But the center may be quite normal and also quite inactive in the presence of ample oxygen if the blood is deficient in carbon dioxide If the center has become inactive, or if its activity is subnormal, there is one, and only one, stimulus that will both restore and maintain normal activity an increase of carbon dioxide in the blood

This is true physiologically, and it is equally true therapeutically It is now many years since physiologists have given up the idea that respiration is essentially due to afferent stimulation,[2] and have adopted the conception of Haldane [3] and his co-workers From

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* From the Laboratory of Applied Physiology, Sheffield Scientific School Yale University

[1] Miescher Rusch Arch f Physiol 1885, p 355

[2] Heymans J F and Heymans C Sur les modifications directes et sur la regulation reflexe de l activite du centre respiratoire de la tete du chien Arch internat de pharmacod 33 273 1927

[3] Haldane J S Respiration New Haven Yale University Press 1922

their work and that of others who have confirmed and extended it, it is as certain as anything in the whole range of modern science that respiration is under a chemical control by the more or less direct action of the arterial blood, chiefly through its content of carbon dioxide, on the respiratory center in the brain It has been proved also that oxygen is not a stimulant, a fact which clinicians seem to find extremely hard to appreciate, for they are continually trying to stimulate respiration with oxygen The combustion in the human body is not like a fire which burns more or less vigorously according to the supply of oxygen Slight deficiency of oxygen is to some extent a stimulant, but only for a short time The stimulation passes readily into a depressant effect if the deprivation is acute or prolonged[4] Oxygen is an essential foodstuff Without oxygen the tissues cannot produce carbon dioxide Asphyxia is usually thought of as a condition of oxygen deficiency and excess of carbon dioxide This is a misconception, asphyxia usually, as in the typical condition of carbon monoxide poisoning, involves both low oxygen and low carbon dioxide content in the blood and tissues

Thus the practical problem of the initiation and stimulation of respiration in a nonbreathing new-born child is very nearly the same as that of the resuscitation of an adult who has been partially asphyxiated On the subject of resuscitation, knowledge and experience have now reached a very satisfactory degree of completeness[5] The theory is well established, and has been confirmed by numerous laboratory tests Apparatus has been developed for practical use and has proved its effectiveness by a wide distribution and application There are now also records of large numbers—numbers rising into many hundreds—of successful resuscitations[6]

In addition, there is direct evidence that the asphyxia of the new-born and of an adult overcome by an asphyxiant gas are effectively relieved by essentially the same treatment This evidence has developed in a somewhat peculiar manner as follows During the last twenty years, my associates and I[7] have kept up a nearly continuous campaign of propaganda for the practical application of the modern theory of respiration What we have urged is, in a word, the immense possibilities for the saving of life available in the therapeutic use of inhalations of carbon dioxide diluted in air or in oxygen Criticism from some of the older school of physiologists—those who still believed in the afferent control of respiration—was not wanting ten or fifteen years ago, but such opposition has now long since completely ceased More recently some biochemists have objected to inhalations of carbon dioxide diluted in air or oxygen on the score of "intensifying an already existing acidosis", but that objection also seems to have died away[8]

Meanwhile, anesthetists generally have become acquainted with the modern conception of respiration, and as a result they are making extensive use of carbon dioxide,[9] mixed either with oxygen or with the anesthetic gases, as a means of controlling respiration during the initiation and maintenance, and for the rapid termination of anesthesia In the hospitals with which such progressive anesthetists are associated there are now large and rapidly increasing numbers of cases recorded in which the obstetric department has called on the anesthetist for assistance, and he has started the new-born baby breathing in the only really effective and scientific manner, by an inhalation of oxygen and carbon dioxide But the total number of children born in hospitals that have reached this degree of scientific advancement is extremely small compared to the number of lives lost, because in most places no such up-to-date assistance is available It is certainly a very unfavorable comment on the art of midwifery that obstetricians do not as yet seem to have availed themselves of an acquaintance with the modern physiology of respiration, or to have provided themselves with the simple means necessary for putting it into effect And yet there is probably more frequent need for resuscitation apparatus in this field than in any other From such estimates as I can obtain, this apparatus would make a difference of one life in a hundred and it must be kept in mind that birth is a hazard through which all must pass Thus, if this estimate is correct, the total number of lives to be saved by the introduction of such simple and easily practicable means would be greater than would result from the complete elimination of some of the diseases of infancy and childhood, such as poliomyelitis and epidemic encephalitis

Although obstetricians have not as yet made more than the faintest beginning along this line, nevertheless through nonmedical channels in a roundabout and surprising manner the application is being made and is saving a great number of lives What obstetricians have neglected to do for themselves they are enabled to bring about in many American cities today by calling in the city fire department The rescue squads of the fire departments bring in their inhalators and start the baby breathing Thus the fire department of one city now reports a large number of such resuscitations in a little more than a year

In the course of the propaganda which my associates and I have carried on for the therapeutic use of carbon dioxide, it became clear, after about ten years of rather ineffective effort on my part, that little could be accomplished for the resuscitation of the victims of gas asphyxiation if our educational efforts were confined to the medical profession Often the physician reaches the patient too late Hospital boards are slow to buy and equip ambulances with inhalators, although all emergency ambulances should be so equipped Accordingly, Dr H W Haggard and I,[10] acting for a committee of which Dr C K Drinker was chairman, devised, tested and introduced a suitable inhalator As the result of a prolonged campaign of education, some thousands of inhalators are now in the hands of coal mining companies, city gas companies, chemical manufacturers and city fire departments, and are on a few hospital ambulances

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[4] Henderson, Yandell and Haggard H W Noxious Gases and the Principles of Respiration Influencing Their Action New York American Chemical Society Monograph Series 1927 chapters 2 and 7

[5] Henderson Yandell Resuscitation J A M A **82** 758 (Sept 6) 1924

[6] Drinker C K The Efficiency of the Oxygen Carbon Dioxide Treatment of Carbon Monoxide Poisoning J Indust Hyg **7** 539 (Dec) 1925

[7] Henderson Yandell Fatal Apnea and the Shock Problem Bull Johns Hopkins Hosp **21** 235 1910 Henderson Yandell and Haggard H W The Elimination of Carbon Monoxide from the Blood After a Dangerous Degree of Asphyxiation and a Therapy for Accelerating the Elimination J Pharmacol & Exper Therap **16** 11 1910 The Treatment of Carbon Monoxide Poisoning J A M A **77** 1065 (Oct 1) 1921 Henderson Yandell Respiration in Anesthesia and the Absorption and Elimination of Volatile Substances Through the Lungs Brit M J **2** 1170 (Dec 19) 1925 **1** 41 (Jan 9) 1926

[8] Henderson Yandell Physiological Regulation of the Acid Base Balance of the Blood and Some Related Functions Physiol Rev **5** 131 (April) 1925

[9] Lundy J S Carbon Dioxide as an Aid in General Anesthesia J A M A **85** 1953 (Dec 19) 1925 See also on this subject numerous communications by various anesthetists in Current Researches in Anesthesia and Analgesia

[10] Henderson Yandell and Haggard H W Report I of the Commission on Resuscitation from Carbon Monoxide Asphyxia The Treatment of Carbon Monoxide Asphyxia by Means of Oxygen and Carbon Dioxide Inhalation J A M A **79** 1137 (Sept 30) 1922

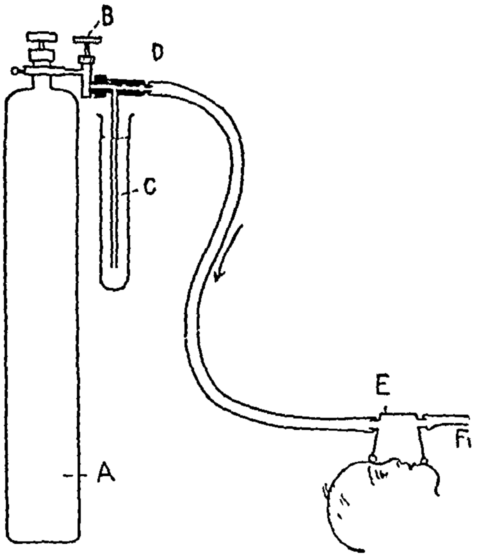
The success of such apparatus for its primary purpose of resuscitation of the victims of gas asphyxiation has been extensive. In addition, and quite unforeseen, has been the application of the same treatment to saving the lives of the new-born. This happens in the following manner, and not once only but repeatedly in every city where these inhalators are introduced. Cases of gas asphyxiation occur; the rescue crew of the fire department is called and resuscitates the patient. A physician sees the resuscitation, and is impressed by the effectiveness of the treatment. Some time thereafter he finds himself confronted with a child which he has delivered, and which has come through a prolonged labor. It refuses to breathe effectively, in spite of the application of all the ancient practices. The respiratory center has been depressed by the diminished blood supply to the brain resulting from compression of the head, and needs more than the normal amount of carbon dioxide to stimulate breathing. So the physician calls in the fire department. If, as is often the case, the fire department succeeds where his medical skill and knowledge have failed, he calls for it again the next time. Now the hospitals in some cities are adopting the practice of calling for the inhalator of the fire department whenever they have a baby who breathes poorly. In effect, they add the rescue crew of the fire department to their board of consultants, and these new consultants thus contribute another service to the community over and above that for which the fire department is primarily organized. Obviously, it is the hospitals that should be equipped to treat asphyxia—asphyxia of every form—and thus to help firemen overcome by smoke and gas, instead of relying on the fire department to help the hospital in such a matter as asphyxia of the new-born.

Turning now to specific points in the treatment of the nonbreathing baby, the negative factors, the things that should not be done, may first be specified. The baby should not be handled or treated with even the slightest degree of roughness, but on the contrary as gently, and with as little irritation and injury as possible. It should certainly not be allowed to get cold, much less "stimulated" by being plunged in cold water. Nor should it be subjected to certain other ancient and unphysiologic procedures, such as the still common practice of allowing an appreciable amount of blood to flow from the cord before it is tied. No blood that can be saved to the child should be lost, for it will be many months before its food contains an appreciable amount of iron.

As to the positive factors, the things that should be done. The child should be carefully kept warm, for it has not yet developed its own heat regulating functions. If the child has not itself spontaneously expanded its lungs by the first cry and does not then continue to breathe normally under the stimulus of its own blood gases there are two and only two things that the obstetrician should do; there are in reality only two things that it is possible for him to do in order to help. The first form of assistance is to inflate the lungs a few times slowly and gently. For this purpose air from the obstetrician's own lungs may be used, as has been the practice ever since the days of Elisha.[11] But it is better to use oxygen containing 5 or 6 per cent of carbon dioxide, or perhaps even with a higher percentage of the stimulating carbon dioxide. The second measure of assistance is then to continue to administer an inhalation of the mixture of oxygen and carbon dioxide as long as respiration is subnormal without it. If the respiratory center is incapable of normal activity under these conditions, no amount of irritation of the afferent nerve endings in the skin will induce continuing respiration. As a stimulant to respiration, nature offers carbon dioxide, but no alternative drug or treatment. Practically, it is the only effective stimulant for maintaining breathing.

The administration of oxygen alone, either for the inflation of the lungs or for inhalation, is far less effective than oxygen plus carbon dioxide, for oxygen does not have a stimulating action on respiration. Artificial respiration is to be avoided aside from the few initial inflations. Even these inflations should be gentle; there are strong objections to such artificial respiration apparatus as the pulmotor or lungmotor, for they are inevitably applied neither gently nor moderately. The person applying them invariably undertakes to do the breathing for the patient, whereas the correct objective is to get the patient as soon as possible to breathe for himself. Even with a simple device for inflating a child's lungs, the operator must be warned not to overdo inflation either in volume or in pressure. The only safe rule is not to use an apparatus with which it is possible to overdo artificial respiration. If use is made of the pressure from a cylinder containing oxygen and carbon dioxide, it must be remembered that the pressure within the cylinder is many atmospheres whereas that which can safely be administered to the child is only one one-hundredth of an atmosphere.

In this matter I hesitate to suggest any precise form of apparatus, for it is best that the men who are actually working under clinical conditions should develop the



A simple and (properly used) safe form of infant inhalator. The cylinder (*A*) filled with oxygen and 5 per cent carbon dioxide may be only an inch in diameter and 10 or 12 inches long. Attached to it is a reducing valve or, as shown here, a special needle valve (*B*) fine enough for careful adjustment of the flow of the gas mixture. The large test tube (*C*) is 6 inches long, of heavy glass, and filled to a mark with water. The vertical tube downward from the T serves as a pressure gage and escape whenever the pressure exceeds a maximum of 3 inches of water column. The capillary tube (*D*) just beyond the T is about an inch long and of such small diameter that under the maximal pressure allowed by the manometer only about a liter of the gas mixture a minute can pass to the face mask (*E*) and on out through the escape tube (*F*) at the right. For inflating the lungs the escape tube is closed between the fingers for two or three seconds. This is essentially the same type of apparatus as that previously described by Henderson, Haggard and Coburn (The Therapeutic Use of Carbon Dioxide After Anesthesia and Operation, J. A. M. A. **74**: 783 [March 20] 1920), a type embodied in some of the anesthesia apparatus now widely used (Foregger, R. V.: Percentages and True Flow of Gases for Gas-Oxygen Anesthesia, Current Researches in Anesthesia and Analgesia **6**: 225, 1927).

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[11] The Bible, II Kings 4:32.

apparatus and be guided continually by their experience with it Merely as a suggestion, and following closely a type of apparatus already in successful use, the accompanying diagram shows in principle one possible simple device But any one of the common anesthetic inhalers having a rubber bag will also serve For the mask, the nose piece used by dentists is a convenient size for the infant's face The lungs are expanded by gently compressing the bag, as described by Sword[12] Neither of these forms of apparatus includes anything new Both could be made small and light enough to be carried in an overcoat pocket Doubtless both can be much improved, especially for hospital use, where weight is unimportant, for instance, a convenient device developed by Joseph Kreiselman, H F Kane and R B Swope[13] is now in successful use in Washington, D C Every anesthesia machine for nitrous oxide, ethylene, and so on, should have an attachment for the inhalation of oxygen and carbon dioxide for the new-born, in order that the anesthetist who relieves the pains of the mother may also start the baby breathing

But until hospitals and outside obstetricians are provided with such apparatus and with cylinders of oxygen and carbon dioxide, they will do well to remember, when the baby does not breathe, that the fire department in every progressive city now has such equipment

SUMMARY

Failure of the new-born to breathe or a condition of insufficient natural respiration should not be treated by the old-fashioned methods of cutaneous "stimulation" Such methods are essentially unphysiologic and harmful They are probably also ineffective in all cases except those in which inflation of the lungs alone would have been sufficient to initiate breathing without additional "stimulation"

Resuscitation of the new-born should be based on the modern conception of the regulation of respiration by the action of the blood gases on the respiratory center Oxygen is not a stimulant but a foodstuff Deficiency of oxygen, beyond a first slight stimulating effect, depresses the nerve centers In the absence of oxygen the tissues of the body cannot produce carbon dioxide It is the carbon dioxide carried by the blood from the tissues to the brain that is the physiologic stimulant to respiration When the center is depressed, it requires more than the normal amount of this stimulant to induce activity

Compression of the head and the consequent decrease of the supply of blood to the brain during prolonged labor depress the respiratory center, so that after delivery the center does not receive a chemical stimulus sufficient to overcome this depression Because of this condition of the center, the first cry does not occur, and the lungs remain atelectatic In order to start respiration, a gentle inflation with oxygen and carbon dioxide for two or three seconds three or four times a minute should be applied As soon as natural breathing develops, the inflations should be stopped, but inhalation of this gas mixture should be continued until full breathing is established This is not only the physiologic and therefore best method in its essential features it is really the only possible method that nature and science offer

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[12] Sword B C Clinical and Laboratory Advantages of Carbon Dioxide in Anesthesia Current Researches in Anesthesia and Analgesia 6 177 (Aug) 1927

[13] Kreiselman Joseph Kane H F and Swope R B Personal communication to the author

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THE NONTUBERCULOUS CHILD*

JOSEPH BRENNEMANN, M D

CHICAGO

The pediatrician is a general practitioner to the young, a chronologic, and not a regional specialist We have not, therefore, that incisive special knowledge concerning the diagnosis of pulmonary tuberculosis that the specialist in tuberculosis has We sit in proper awe, possibly a little skeptical at times, but only wholesomely so, as you unravel the mysteries of a suspected chest with that peculiar precision that you have acquired and that we, and I might include not a few internists, frankly do not possess If we sometimes feel that an immediate autopsy might be instructive it is only because of that reasonable skepticism that is imposed on every intelligent clinician by the still existing limitations to unfailing diagnosis in chest conditions, that makes it still rather an art than a science I shall not therefore "bring coals to Newcastle" by dwelling on finer points of diagnosis but will attempt as a pediatrician, speaking before a body of men interested especially in tuberculosis, to tell you what a pediatrician has in mind and thinks he ought to say on an occasion like this, with especial emphasis on the child that might have, but does not have, tuberculosis

It is one of the pediatrician's frequent experiences to have brought to him a child whom the mother has anxiously suspected of having tuberculosis of the lungs In the great majority of cases her suspicions are unfounded clinically Her fears are commonly based on one or more of the following points

1 The child is underweight, whatever that may be, and is, or is not, run down, easily fatigued, and lacking in "pep

2 He has a persistent cough

3 He has a persistent low-grade temperature slightly above the accepted normal

4 He has had a "pneumonia" and still has a fever and pathologic changes in the lungs

5 He has been suspected of having tuberculosis of the lungs by his physician and this suspicion has been confirmed by a positive Pirquet test or a roentgen-ray diagnosis

6 He has been exposed to tuberculosis

It will perhaps not be amiss to take up these points seriatim Before doing so, however, I should like to stress two points the positive value of an examination of the sputum if it is positive, and the equally positive value of a Pirquet test if it is negative Examination of the sputum is omitted more often than it should be because of the assumed difficulty or impossibility of getting a serviceable specimen from a young child who has not yet learned to spit As a matter of fact, the procuring of a specimen is a very simple matter even in the baby Immediately after a coughing spell, either spontaneous or induced by faucial irritation, the throat is swabbed low down and the specimen transferred to a slide While the field of usefulness of this procedure is limited in childhood, it is sometimes of decisive value in the child with a persistent, productive cough without definite lung changes, and in the child with marked lung findings that may or may not be tuberculous in origin In the present discussion of the nontuberculous child, examination of the sputum does not play a prominent part because it is of value only in establishing a diagnosis of tuberculosis and that too late, and of little or no value in excluding it

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* From the Children's Memorial Hospital

* Read before the Mississippi Valley Conference on Tuberculosis, St Louis Sept 20 1927

Exactly the opposite is true of the Pirquet test I use the term "Pirquet test" in a generic sense as including the other special tests It is the one most commonly employed and to my mind the most generally serviceable It may be a fraction less delicate than the intracutaneous test, but I doubt the practical value of that fraction The Moro test is probably more uncertain and the Calmette test is fortunately no longer in use If the Pirquet test is positive it tells us that the child has a tuberculous infection, but it does not tell us that that infection has any clinical significance or has any bearing whatever on the condition that brings the child for examination In the older child the positive test may mean relatively little, but considerably more than it does in the adult Per se it may have no value, in a proper clinical setting it may be decisive In the infant it is always ominous because it means an active tuberculosis and we all know what that means in an infant The baby with a positive Pirquet test should be regarded as a tuberculous patient and if properly treated his chances are good if there is no other evidence of tuberculosis, even in the first few months of life In my experience a negative Pirquet test, on the other hand, for all practical purposes excludes tuberculosis at any age The only exceptions are certain infections such as measles, sometimes a massive terminal tuberculosis, more often a miliary tuberculosis toward the end, and quite commonly a tuberculous meningitis, but all of these rarely offer any serious difficulties in diagnosis If all of this is correct, and I am convinced that it is, the value of a negative Pirquet test and the desirability of occasionally employing it in the type of case we are now interested in, both for its diagnostic and for its psychologic value, would seem to be evident I would by no means advocate a frequent resort to that test except for the pedagogic value of a routine test in a hospital where the parents are absent It is not right to demonstrate to a mother's eye that the child has a tuberculous infection that has for all practical purposes no clinical counterpart In making the test one must, of course, be familiar with the proper technic and also with the fact that not all tuberculin is potent, as we have learned from experience A negative reaction can be accepted only if repeated, and if the material is of known potency

"Underweight" and a run-down condition are clearly indications for investigation So-called underweight, as if any one knew in a given case what the proper weight should be, has per se no significance While the widespread propaganda of weighing and measuring all children has led to the unearthing and removing of many causal defects, such as diseased tonsils and adenoids, carious teeth, or faulty habits and hygiene, it has also caused many a needless heartache Children are individuals, physical as well as mental The greyhound and the airedale are as healthy, normal and efficient as the mastiff and the St Bernard Some children are "skinny" because they are active, and active because they are "skinny", others are phlegmatic because they are fat or fat because they are phlegmatic There is no reason in health, other things being equal, why one should be converted into the other or why the two should be brought to a common artificially determined medium The very mother who brings her child because he is so thin and shapeless is probably doing all she can just now to be as nearly like him as is humanly possible I think it is a well grounded pediatric conviction that the thinner, active child is a better health risk than the fat, phlegmatic child and, at least, an equal risk with the so-called normal weight child The thin, active child with a good appetite and a good color gets, but hardly requires, a thorough physical examination His very activity and lack of fatigue exclude a clinical tuberculosis The child, on the other hand, that is thin and run down, has a poor color and appetite, tires quickly and is manifestly sick requires the most careful scrutiny as to a possible tuberculosis by all helpful means, no matter what other abnormalities he may present

It cannot be emphasized too strongly, on the other hand, that a normal weight and an apparently normal state of nutrition do not exclude tuberculosis The baby with an extensive pulmonary tuberculosis may be of average weight, may even gain normally for weeks and months up to that inevitable rapid loss as the end approaches And it is a melancholy and depressing fact that the child, young or old, that has a tuberculous meningitis, the result of a sudden hematogenous invasion from a previously insignificant and unrecognizable lesion, is as often as not an otherwise normal, even blooming, physical specimen An intern recently asked me "Why is it that tuberculous meningitis always occurs in the healthiest looking children?" a question not wholly well founded, but, nevertheless, significant in this connection

A persistent cough evidently requires careful investigation Often the child will come with the story that he "coughs all the time," or that "he has had a cough for years" Careful inquiry will commonly reveal the fact that instead of a continuous cough the child has had frequent spells of cough lasting from a few days to a few weeks, or even a month or more Further inquiry will often disclose that such attacks are ushered in suddenly by fairly high fever, a coryza, or a sore throat, or a cervical adenitis or an otitis media, that leave no doubt that the child has had an upper respiratory tract infection The child may still present one or the other of these at the time of examination After such acute attacks children will often cough, and cough harassingly and nonproductively, for many weeks and yet appear in otherwise perfect health The possibility of repeated attacks of bronchial asthma or asthmatic bronchitis as a cause of such coughs must be borne in mind, the nature of which may be unknown to the mother and also to the physician unless he sees the child in an attack The story of frequent attacks of coughs over a period of years would lead me very strongly to lean away from a diagnosis of tuberculosis rather than toward it A chronic tuberculous cough would be more apt to be continuous, not widely intermittent, and in a child would moreover almost surely be accompanied by fever, fatigue, pallor, localized fine rales suppressed breathing or other lung conditions, all of which are regularly absent in the type of case I am considering The reason for the absence of physical signs and of constitutional symptoms in these children is, I am inclined to think, to be found in a slight, superficial inflammation restricted to the throat or to the trachea and larger bronchi, with perhaps occasionally a marked persistent nonspecific peribronchial lymphadenitis, any of which might stimulate the cough reflex Clinically they often closely resemble a smoker's cough Parenthetically, the fact that the tonsils and adenoids have been removed has no bearing on the subject Coughs due to acute upper respiratory tract infections are about as frequent after tonsillectomy as before, and there is considerable evidence that, if anything, they are more persistent when they do occur It is the mucous membrane and not the tonsils and adenoids that are at fault, especially in the younger child. If any of these persistent coughs are productive or are accompanied by constitutional symptoms and physical conditions it of course becomes imperative to examine the sputum and to resort to all other helpful diagnostic measures. The diagnostic and psychologic effect of a negative Pirquet test is here often of great value.

A persistent type of cough is that due to bronchiectasis. The occurrence of infrequent prolonged spells of coughing, especially when brought on by change to a certain position, during which large amounts of thick fetid material are coughed up, leaves little doubt as to the diagnosis. The remaining doubt can now be settled by recent methods of pneumonography. Practically the same thing can be said about a lung abscess that is discharging through a bronchus.

The presence of a foreign body sometimes offers greater difficulties in this connection. It is surprising how often one fails to get the history of the classic onset with sudden violent coughing, choking and cyanosis. Often the only remaining symptoms when the child is seen are a wheeze, often unilateral, and a cough. The cough, too, as Chevalier Jackson has pointed out, is absent when the foreign body becomes firmly lodged and does not move. The roentgen ray will show only the denser bodies; it is those of vegetable origin that do not show and that are the most serious. Peanut candy furnishes a high percentage of foreign bodies, for obvious reasons. Such nonopaque foreign bodies can often be diagnosed from the symptoms and physical signs. A wheeze that is not evidently asthmatic should always be regarded as suggestive. An area of dulness with absent breath sounds, and especially absent breath sounds irregularly alternating with bronchial breathing and bronchophony, is practically diagnostic, in the proper clinical setting, of a collapsed or atelectatic portion of lung due to a plugged bronchus or to a bronchus that is alternately completely and partially plugged. The complete plugging of a main bronchus leads to absent breath sounds on the corresponding side, to absorption of air with retention of secretions, to solidification and contraction in volume of the affected portion, with drawing of the heart into the dull area, and an emphysema of the opposite lung. The roentgen ray furnishes a striking picture of this condition that is pathognomonic. Equally diagnostic is a lung that is hyperresonant on one side, with absence of breath sounds on the same side, and with the heart pushed to the opposite side. In this condition there is an obstruction due to a valvelike foreign body so placed that air is permitted to enter but not to escape.

When only one lobe, usually the lower right, or only a portion of one lobe, is completely obstructed, the diagnosis is a little more difficult. The roentgen ray will then often show a well defined wedge-shaped area of greater density. It is in these cases that the diagnosis is usually easily confirmed by a competent bronchoscopist and the therapeutic result is often little short of miraculous. The neglected case with a chronic cough, and localized moist lung conditions, often lasting for many years, can easily be confused with tuberculosis. In such cases the foreign body moves freely, is metallic in nature and can easily be found with the roentgen ray, and its removal even after many years leads to a prompt cure. I believe that ultimately the immediate cause of practically all cases of collapsed or acquired bronchiectatic lung will be found in the plugging of a bronchus. The most instructive case of this kind that I have ever seen was that of a child, reported elsewhere, that had three areas of collapse following a tonsillectomy, unquestionably due to the inhalation of shreds of tonsil, adenoid or blood clots, while the cough reflex was in abeyance because of anesthesia. Prompt cure followed one bronchoscopic treatment, though the child had had a high fever for four weeks.

A still more frequent cause of anxiety to the parents is a persistent low-grade temperature. I have myself had great difficulty in orienting myself as to what constitutes a normal temperature in a child. I find myself at one time quite concerned about a persistent temperature of 99 to 100 by rectum, and again, in a different clinical setting will find myself telling a mother to forget about it and to quit taking the temperature. In my experience a fairly persistent temperature of 99 to 99.5 and even occasionally 100 is many times more frequently due to some other condition than it is to tuberculosis. Such temperatures frequently occur after upper respiratory tract infections. I am free to confess that in the great majority of these cases I do not know the offending locus of infection if there is one. I am also inclined to believe that those who definitely, in a given case, locate the cause in a cryptic tonsil, a paranasal sinusitis, a latent mastoiditis, or a peribronchial lymphadenitis do not know any more about it than I do. I am not yet convinced that most of these things are not more or less normal or, at least, innocuous complications of most every fairly severe upper respiratory tract infection, that in most cases any active intervention is meddlesome, and that an apparent therapeutic result is usually a coincidence. When such a temperature occurs in an otherwise apparently healthy child in whom I cannot find lung or other evident pathologic changes, I dismiss the case with a mere warning. If a Pirquet test is negative, I dismiss it without a qualm. If, on the other hand, the temperature goes to 101, even on rare occasions, or if the Pirquet reaction is positive I put the child to bed as a sick child and search diligently for the underlying pathologic condition with a real interest in the possibility of a tuberculous infection.

A further cause for worry is the child that has had a pneumonia and now after weeks, perhaps months, still has a fever and pathologic changes in the lungs. Has he a tuberculosis or an unresolved pneumonia? If the child was under my observation at the beginning, the differentiation is simplified. If there was a frank pneumonia in a previously healthy child the chances are all in favor of an unresolved pneumonia. If the beginning was insidious and the date of onset not well marked, if the temperature was never over 101 or 102, or if there was a decided pleuritic pain, one more strongly suspects tuberculosis. A serous pleural effusion makes it almost positive. I have only twice encountered an abundant, clear serous effusion in an unquestioned nontuberculous pneumonia. The physical observations vary widely in the two conditions. In an unresolved pneumonia there is nearly always an extensive area of involvement, an abundance of fine to coarse, very loud and very moist rales, with definite dulness, bronchial breathing and bronchophony, all of which are at variance with the usual condition in a tuberculosis of comparatively short duration. In my experience if a healthy child has had a definite pneumonia at the onset, the fever and physical conditions that persist often enough for weeks and even months will eventually clear up and are practically never due to a superimposed tuberculosis. In unduly protracted cases, however, one naturally resorts to all the usual diagnostic procedures to exclude a possible tuberculosis.

More acute than any of these conditions is that in which the physician himself, because of fever, cough, a run down condition or what not, in lieu of something definite has suspected tuberculosis, has expressed his suspicions, and has had them confirmed by a Pirquet test or a roentgen-ray diagnosis. To the average mother such a procedure spells consumption. I have already discussed the negative value of a positive Pirquet test and stressed the psychologic, tuberculophobic aspects.

I have so far said nothing about the roentgenologic examination in the diagnosis of chest conditions in children. At the Children's Memorial Hospital after examining a child and recording our observations we examine the roentgenogram in practically every case often with the idea of settling a dispute. In what I shall say I want it definitely understood that I believe I am adequately impressed with the frequent confirmatory or nonconfirmatory, and the occasional absolutely determining value of a roentgenologic examination of the chest, and I need not express my deep respect for the experienced and candid roentgenologist who frankly and intelligently appreciates his limitations and acts accordingly. I am not now speaking of theory and of abstract values, but of a very concrete condition that exists. The idea that the roentgen ray is a final instrument of precision in the diagnosis of tuberculosis of the chest is not wholly restricted to the laity. Few physicians, unless they have an extensive hospital experience, feel competent themselves to interpret a roentgenogram. The roentgenologist is expected to render an opinion and that opinion becomes for all practical purposes a diagnosis, whether he intends it to be so or not. That diagnosis often enough leaves a scar that all our clinical experience and all our explanations cannot eradicate, and, from the very nature of things, explanations are sometimes difficult or even embarrassing. We are all of us familiar with the roentgenologist who has a veritable tuberculosis complex. Every hilum shadow that is denser or more extensive than an assumed normal, every area that is a little more mottled than is usual, intrigues him into a suspicion of tuberculosis, and in tuberculosis an expressed suspicion soon becomes a certainty. The question naturally arises, By virtue of what experience, or of what special learning has a roentgenologist a right to make a diagnosis of tuberculosis, or of its absence, in a given doubtful case? Surely a mere M.D. degree conveys no such license, and any amount of clinical experience helps little in a given case whose clinical history and physical signs he does not know. Has he even seen, or does he now see, autopsies on his patients? When he calls a certain denser shadow a "calcified" gland, with all the significance that that diagnosis carries with it, has he ever felt the grate of a knife through one? Can he, unaided by extensive clinical and autopsy experience in general, and in a given case in particular, tell whether apparently exaggerated hilum shadows are due to specific or to nonspecific involvement, whether a mottled density means tuberculosis in a given case, or whether a clearer area in denser shadow means a cavity, with all that that implies, or perhaps a failure to consolidate, or a rapid localized resolution, of a restricted area of pneumonic lung? In three successive patients in whom a very competent and conservative roentgenologist had made a positive diagnosis of tuberculosis, for good conventional reasons, the autopsy revealed not a trace of tuberculosis, and the Pirquet test had been negative in each. The diagnosing roentgenologist who sits before his screen and deals out the messages of life and death is not unlike Mencken's philosopher "a man who unravels the mysteries of existence without the aid of concrete scientific data on which to found his conclusions." In the last analysis the fault is not his but that of the system. He is expected to render an opinion, an interpretation, and he cannot afford to render it on the dangerous side if there is a doubt. And are we doing our full duty in not constantly consulting with him and instructing him when the clinical course or an autopsy confirms, or fails to confirm his interpretation? It is easy to picture an ideal system, but it is hard to realize for obvious reasons.

At the Children's Memorial Hospital with about 250 beds, and with about 200 autopsies a year, in round numbers nearly 70 per cent of all deaths, we have recently started an extensive study aimed to correlate for us, and we hope ultimately for others, the clinical, roentgenologic and autopsy observations of all chests that come to autopsy. As is our custom at all times, the case is first and constantly studied clinically and the results recorded, roentgenograms are then taken and compared with the clinical record, further pictures are usually taken during life if possible and another immediately after death, all of these are read and recorded by the roentgenologist, the lungs are then fixed in situ, or inflated, removed and again roentgenographed, they are then minutely dissected and examined by a very competent and enthusiastic resident in pathology, Dr. Bigler, who devotes the major part of his time to that work. With the clinical and roentgenologic evidence before him, commonly supported by a previous clinical study of the patient himself, he attempts to determine the exact nature, macroscopically and microscopically, of any shadow and lack of shadow in the film. At the weekly pathologic conference the case is then reviewed clinically, the films and the specimens are compared, and the roentgenologist is informed as to the results. The autopsy is a great leveler, and we are all becoming duly humble, wholesomely conservative, and wisely charitable. We hope at the end of a year with some 150 autopsies so studied behind us to be no longer menckenian philosophers but more nearly true scientists who base their deductions on concrete, demonstrated data. The results even after a couple of months are illuminating. I would like to tell you some of them, but it would not be quite fair to our clinical pathologist to "steal his thunder." I cannot refrain from saying, however, that the "calcified" gland has always been a thorn in my flesh, and that of the many so diagnosed in these cases none have shown any evidence of calcification while, on the other hand, three calcified glands were undiagnosed antemortem and were hard or impossible to find in the film, even in retrospect.

There is one chest condition due to tuberculosis in which the roentgenologist can readily make the diagnosis from his film, and we cannot with certainty clinically, because of the absence of all physical signs, i. e., a miliary tuberculosis or rather an early miliary tuberculous bronchopneumonia, especially in the baby. Even here there is room for caution. I have seen a number of cases that were diagnosed roentgenologically as miliary tuberculosis, usually unilateral and not without some superficial justification, gradually clear up as a widely disseminated bronchopneumonia would be expected to do in the presence of a negative Pirquet reaction.

Lastly, the mother who brings her child because he has been exposed to tuberculosis deserves our deepest interest and our most active cooperation We have *fortunately* long got away from the idea that tuberculosis is rare at the extremes of life The younger the individual, the younger the child, the younger the baby, the greater the danger of contagion, and the new-born baby should be guarded against tuberculosis as against the seven plagues If I can avoid it I will never allow a new-born baby to live in the same house with its own mother, or with any one else, that has any suspicion of an open tuberculosis An open or suspected open tuberculosis is an absolute contraindication to nursing, not because of the danger from the milk but because the baby must be brought into the same room with his mother Ordinary precautions that will protect the adult or the older child are wholly inadequate with the baby The tuberculous patient at best is apt to get careless at times the expression of what the psychologists call a defense mechanism, and it is not humanly possible to trust a mother to keep at a safe distance from her new-born baby The baby that has been exposed even for a short time to an open tuberculosis, and the older child that has been seriously exposed should be considered tuberculous and, so far as possible, treated as such no matter what the present state of health may be Except in the case of the new-born baby the prognosis is, however by no means wholly bad even if the child, or older baby, is definitely infected I recall a baby of 7 months that nursed her mother, who had an open tuberculosis and was notoriously indifferent, to within a few weeks of the death of the mother, a baby that had a Pirquet reaction as big as a dime and yet is now 17 or 18 years old and said to be in robust health I would like especially to emphasize the fact that the grandfather, who lives with the family, who has coughed for years with an assumed "old man's cough," is a not infrequent cause of contagion to the grandchildren

I have discussed at length in a former paper[1] the treatment of the nontuberculous diseases of the chest and will restrict myself to a few generalities The all-important triad in the medical treatment of all these conditions is the same triad you have so long employed, rest, food and air In fact, the treatment is practically identical with that for tuberculosis, the order of importance has been shifted from time to time

Of these three there is no longer any doubt in my mind that rest, rest in bed, complete rest whenever there is fever and fatigue, is the greatest single general therapeutic agent, and it is just as effective and just as easily carried out in the child as in the adult

Food comes second One can commonly disregard the underlying pathologic condition if the child will eat and get fat Four important points here bear emphasis first, the child will eat better, just as does the tuberculous patient with fever, if he is at rest in bed, second, he will commonly eat better in a strange environment or for a strange person than he will at home for his mother, third, it is not only useless to coax and wheedle and beg or even force a child to eat—it is the surest way known to get him not to eat, fourth, medicine, per se, is of little or no value If the child is convalescent, no longer febrile, iron will often help, and cod liver oil if well taken in one form or another is, of course, a most useful and peculiarly valuable food

Air is third Climate was long first, and innumerable early graves in the dry, sunny West can bear mute testimony that it should not have been Fresh air, on the other hand, outdoor air, air not in a room, day air or night air, air in Arizona or air in Illinois, is just as valuable today as it was before we found out that ultraviolet rays from the sun, from a quartz lamp or from a carbon arc lamp will prevent and cure rickets and will act favorably on certain forms of tuberculosis if used judiciously I am very skeptical about the panaceal value of the ultraviolet rays that now have the spotlight, and I am not at all convinced that they will cause a cavity the size of a walnut in a young child to close up and leave no trace, in a comparatively short time, as was recently reported from a high source The cavity was, by the way, apparently diagnosed by roentgen ray only It is hard to get away from the fact that all races much exposed to the sun, all farmers, life guards, beach bathers, develop a pigment, or a tan, that has all the earmarks of a protective mechanism, and that overexposure to ultraviolet rays will destroy the antirachitic properties that can be imparted to otherwise inert substances by shorter exposures

Of drugs other than cod liver oil, if it may be called such, or iron for anemia and convalescence, or opiates for their sedative action in harassing coughs, it is hardly worth while to speak because placebos are less often needed in children than they seem to be in adults

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INTENSIVE POSTURAL REST IN THE TREATMENT OF PULMONARY TUBERCULOSIS *

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Several years ago Webb[1] and his co-workers called attention to a new method of treating pulmonary tuberculosis, namely, "postural rest" The absence of further reports since that time leads us to believe that this method has not received the recognition it deserves We offer this brief report in the hope that other workers may learn of its value

The object of postural rest, according to Webb, is to secure practically complete rest of the diseased lung by having the patient lie on the affected side He showed that after from thirty minutes to an hour in this position the respiratory excursions of the chest wall are greatly diminished In some cases there is a definite sagging of the heart and mediastinum due to gravity Often after several months of postural rest there is a marked shrinkage of the diseased lung caused by fibrosis, with decrease in the size of cavities, sometimes to the point of complete obliteration

We have used this method of treatment in a large number of cases with some modifications which serve to intensify the rest as well as accomplish some other things that Webb fails to mention He says that in some cases a thin pillow is placed under the affected side to increase the splinting effect In our cases we have used a pillow especially built for this purpose It is in the shape of a small mattress, with side walls, and

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[1] Brennemann Joseph Medical Treatment of Chronic Nonspecific Infections of Lungs and Bronchi in Children J A M A **87** 801 (Sept 11) 1926

* From the Albuquerque Sanatorium

[1] Webb, G B Forster A M and Houck F M Rest of the Individual Lung by Posture J A M A **67** 1422 (Nov 11) 1916 Webb G B Forster, A M and Gilbert G B Postural Rest for Pulmonary Tuberculosis ibid **76** 846 (March 26) 1921

2 pounds of mule hair provides the proper amount of filling The thickness is 3 inches, which raises the shoulder sufficiently, so that it bears none of the weight of the torso When pressure is applied to the shoulder, the force is transmitted along the clavicle to the sternum and does not retard the motion of the chest wall The width, 10 inches, represents the distance from the upper axilla to the lower margin of the lung in the average individual The length is 20 inches, which permits the patient to roll forward or backward without diminishing the pressure on the thoracic wall, and gives relief from discomfort by the change in posture Thus the weight of the upper body with the exception of the head is supported by the chest wall Roughly, this amounts to a pressure against the thorax equal to half the body weight The head is supported by ordinary pillows adjusted as the patient's comfort indicates

Our method is to have the patient begin with one hour of postural rest the first day and increase a half hour daily until he reaches a maximum of from sixteen to twenty hours out of the twenty-four Some of our patients can increase this dosage more rapidly, while others must progress more slowly The rate of increase is governed by the comfort of the patient It is not uncommon for patients to report, after several months' treatment, that they cannot rest well unless they are on the pillow When not using the pillow, the patient rests on his back but never on the well or less diseased side

At first nearly all patients notice a temporary increase in cough and expectoration, and there may be a slight increase in temperature Within a week these symptoms subside, and frequently from this time on there is a steady decrease in the amount of sputum as well as improvement in other symptoms We often notice a similar increase in temperature and sputum on inducing artificial pneumothorax, and the cause is the same We have occasionally seen slight spitting of blood when postural rest is begun, but this rarely amounts to more than a little oozing which subsides after a day or so It is possible that the postural rest causes a passive hyperemia of the treated lung which might produce this oozing

The lung is expanded by the outward excursions of the chest wall and the downward motion of the diaphragm The muscles of the thoracic wall are not accustomed to working against a pressure equal to half the body weight and soon become so fatigued that all motion ceases From this time on, while the patient is on the pillow, the upper two thirds of the chest, where most of the tuberculous involvement is found, is at absolute rest

Webb only casually mentions the sagging of the heart and mediastinum by gravity toward the side on which the patient is lying In our opinion this is the most important factor in the success of this treatment This sagging reduces the normal tension in the pulmonary tissues, sometimes to a considerable degree Pressure readings in cases of pneumothorax cases will almost always show a difference when the posture of the patient is changed When the patient lies on the side with the pneumothorax, the pressure is often as much as 8 to 10 cm (water manometer) more than when the patient lies on the other side In postural rest there is a corresponding increase in the intrapulmonary tension in the other lung Now in any chronic inflammation, any change in the tension within the tissues is a stimulus to fibrosis, i e, healing (The increased tendency toward healing of tuberculous pulmonary lesions in the higher altitudes is due to the change in intrapulmonary tension which accompanies the increase in the girth of the chest)[2] In cases presenting bilateral involvement, and these are the most numerous among our patients, improvement in the contralateral less diseased lung, which we often see, is no doubt due to the change in the tension within this lung

In tuberculous pulmonary cavities the tendency to contraction is usually slight because of the presence of infection, in contrast to the marked tendency of healthy scar to great contraction The normal intrapulmonary tension is usually enough to offset the low contractile force of the fibrous cavity wall Any reduction in the intrapulmonary tension greatly reduces the force which normally effectively hinders the contraction and obliteration of cavities As cavities heal by contraction to the point of obliteration, any means favoring such shrinkage should be utilized to the utmost

The thickness of the wall of a cavity is of much less importance than the amount of pus that is discharged from it It is an absurdity to encourage a patient by telling him that the cavity wall is becoming thicker when there is no reduction in the amount of sputum As mentioned in previous papers,[3] pulmonary consumption spreads through the lung by aspiration of pus containing tubercle bacilli into previously healthy lung tissue The probability of spread is in direct ratio to the amount of sputum[4] The thickening of a cavity wall which often occurs in chronic cases has nothing to do with extension of the disease and is no protection whatever This thickening frequently hinders contraction, whether intensive postural rest or pneumothorax therapy is employed, and is thus a liability instead of an asset to the patient

Extension, when it takes place, is brought about by aspiration, which in turn is caused by two factors One is the increase in the normal negative intrathoracic pressure during inspiration This force is greatest where the motility of the chest wall is greatest, as Tendeloo[5] points out, namely, the lower lateral region The other force which cannot help having a bearing on the general direction of aspirations is that of gravity Most extensions occur on the same side and extension into the contralateral lung is much less common, though it does occur By postural rest the aspiratory force is greatly diminished, if not completely abolished, and with the patient on the side from which most, or all, of the sputum is produced, the effect of gravity in these extensions is obviated We are convinced that extension into the opposite lung is greatly favored by gravity, and it is our practice to impress on our patients the danger of lying on the well or less diseased side For this reason, when the patient is not on his pillow we insist that he lie either on his back or on the diseased side without the pillow We have seen a number of cases in which the advice was given to lie on the well side with later disastrous consequences Thus postural rest, even if it does not benefit the lesion, tends to keep the disease localized In other words, if it does no good, at least no harm is done

In our practice intensive postural rest as described is used as a routine procedure in most of our cases It is our rule to attack the side presenting the greatest involvement in bilateral cases If necessary, when the maximum benefit is achieved on the one side, the other can be treated later if it has not shown improvement We have seen cavities in the contralateral lung disappear during treatment, and obliteration of cavities in the treated lung occurs with sufficient frequency to make this method of treatment our first choice and pneumothorax or thoracoplasty second and third, respectively, in attacking cavities Postural rest does not in our experience encourage the formation of pleuritic adhesions to hinder pneumothorax therapy if this should prove necessary later As a preparation for thoracoplastic treatment it brings about a stiffening of the lung, fixation of the mediastinum and increased firmness of existing pleuritic adhesions which in our patients have entirely prevented any respiratory difficulties following operation After thoracoplasty, postural rest, when it can be used, greatly increases the amount of collapse of the chest wall

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[2] Gekler W A Tuberculosis East and West Memphis M J (June) 1926

[3] Gekler W A Phthisis Pulmonalis and Other Forms of Intrathoracic Tuberculosis Arch Int Med 20 32 (July) 1917 Gekler W A Tuberculous Cavitation of Lung J A M A 82 457 (Feb 9) 1924

[4] Nicol K Pathologisch anatomische und Klinische Betrachtungen der Lungenphthisis Beitr z Klin d Tuberk 30 No 2

[5] Tendeloo Studien über die Ursachen der Lungenkrankheiten Wiesbaden 1901

In our cases of pneumothorax we have successfully used postural rest on the contralateral side for small cavities in the uncollapsed lung In other cases, when adhesions hinder effective collapse and tuberculous sputum is still being produced from the partially collapsed lung, postural rest on that side by the sagging of the mediastinum has occasionally made the collapse effective and resulted in the closing of cavities

In the ordinary rest regimen as used in sanatorium practice, the patient is on the defensive against his disease and simply lives in the hope that by the grace of God spontaneous recovery will take place The military axiom that the best defensive is a vigorous offensive also holds in fighting tuberculosis By carrying out intensive postural rest, the patient becomes an active partner in an aggressive measure against his disease This change of front is of untold psychic value in the treatment of a disease in which psychic disorders[6] are frequent enough to deserve careful attention The rationale of this method of treatment is simple and logical and is easily grasped by the average patient

We have found that we cannot use postural rest in patients who are greatly debilitated In acute, recent, massive infiltrations, we do not use it because we are fearful that it may accelerate their breaking down Such lesions in our opinion are not suitable for any method of mechanical attack[7] The rest cannot do harm, but the alteration in intrapulmonary tension may cause a lesion to break down which might partially resorb otherwise Some of our patients present such psychic instability that they cannot be depended on to cooperate in this or any other form of treatment In a few patients of neurotic type the cough reflex has been so severe and annoying that the treatment could not be used In left-sided lesions, especially in patients of visceroptotic habitus, we find it wise to caution the patient not to resume postural rest for an hour after meals to avoid digestive disturbances due to delay in emptying of the stomach We do not use postural rest immediately following hemorrhages for fear that the decrease in tension may result in passive hyperemia which would encourage further bleeding We find that patients who have marked cardiac displacement due to adhesions, and with this myocardial degeneration, do not tolerate postural rest well Acute pleurisy is sometimes relieved and sometimes aggravated by postural rest

It must not be supposed that difficulties are not encountered We have mentioned the initial increase in expectoration and fever These are rarely of more than a few days' duration In two cases, after prolonged treatment, we have seen cardiac displacement to the right of such extreme degree that it was a causative factor in the death of the patient To be sure, there was also great myocardial degeneration coexisting In patients with extremely large cavities, it is impossible for the mediastinum to shift enough to compensate for the tissue defect, and, when the maximum contraction of the cavity with postural rest has been achieved, thoracoplasty must be depended on to complete the obliteration In a certain percentage of patients, especially those who have had pleurisy with effusion, there is a fixation of the mediastinum of such degree that it does not relax and seems insusceptible of displacement Such cases do not respond to postural rest and, if anything, the mediastinum becomes more fixed—excellent preparation for either artificial pneumothorax or thoracoplasty In a very few lower lobe cavities we have had absolutely no success, though had we combined postural rest with phrenicotomy the results might have been different We have not had an opportunity to try postural rest in nontuberculous abscesses of the lung

Webb mentions rather frequent disappearance of rales over the side subjected to postural rest This is directly contrary to our experience We do notice a marked change in the râles and breath sounds as a rule The râles are very coarse and creaky They may even be more numerous than before treatment They are not much influenced by cough, and occur irregularly in any phase of respiration The breath sounds become harsh and in many cases distinctly tubular in quality We have seen cases in which there were no physical signs of a cavity[8] when treatment was begun, though there was indisputable roentgen-ray evidence with persistently positive sputum After several months of postural rest in such cases the classic physical signs of cavitation were present, but the roentgen ray showed complete obliteration and the sputum was either absent or mucoid in character and constantly negative for tubercle bacilli We warn our patients of the presence of physical signs which are usually interpreted as indicating cavitation, so that if examined later by other physicians they may not be alarmed by a discouraging report We have seldom seen such a degree of fibrosis on the ordinary regimen of rest

In our experience, when good results are obtained with postural rest it is within the first three to six months of treatment It has long been our rule to have stereoroentgenograms taken in our cases at three month intervals The measurements of the size of the cavity and the twenty-four hour quantity of sputum are our guides as to results When these tell us that the progress in a given case is at a standstill and that all the improvement possible with postural rest has been obtained, such other measures as may then be indicated are used

We do not wish to dispute the claims of the designers and manufacturers of the various chest splints that these devices will stop respiratory motion of the chest wall on the side on which they are used They cannot do the other and more important things that postural rest will do The use of a chest splint is apt to give the patient the idea that the strict rest regimen can be dispensed with and, by giving him a false sense of security, encourage him to commit indiscretions We have found these splints of value following thoracoplasty, especially in patients who, for any reason, must be ambulatory

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[6] Weigel B J Neuropsychiatry in Tuberculosis M J & Rec **121** 40 (Jan 7) 1925

[7] Gekler W A Pneumothorax Therapy in Tuberculosis Boston M & S J **191** 930 (Nov 13) 1924

[8] Weigel B J Intrapulmonary Cavitation in Tuberculosis, Am Rev Tuberc **10** 319 (Nov) 1924

CONCLUSIONS

We believe that in intensive postural rest as we use it we have a method of treatment of pulmonary phthisis that deserves to rank with artificial pneumothorax and thoracoplasty in value and effectiveness It is applicable in a wider range of cases Complications are no more frequent and certainly less dangerous than with pneumothorax and thoracoplasty When results are not obtained, pneumothorax or thoracoplasty may still be used We see striking benefits, i e, the maximum amount of healing possible in view of the nature and extent of the lesion, in fully one fourth of our cases, and in another fourth there is considerable improvement When clinical cures are obtained with postural rest, they are just as enduring as with any other form of treatment

ESSENTIAL HEMATURIA

A CLINICAL STUDY *

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Hematuria is always an alarming symptom and its cause must be carefully sought by the conscientious physician If there are repeated short spells of bleeding a malignant lesion somewhere in the urinary tract should be suspected When the bleeding is associated with dysuria and occurs in the earlier part of life, a tuberculous infection would be a more probable cause, if bleeding is accompanied by severe colic, the presence of calculus is suggested When hematuria is painless and of long duration, disappearing for weeks at a time, the possibility that it is of the so-called idiopathic or essential type must be considered

In order to make this diagnosis, cystoscopic examination is necessary, at which, all other causes of bleeding being excluded, a diagnosis of essential hematuria is reached by the process of elimination Some urologists are of the opinion that such a diagnosis serves as a cloak for ignorance of the exact condition, and believe that hematuria is but the early manifestation of some disease such as nephritis, malignant neoplasm or infection which is not sufficiently advanced to be detected Schenck[1] goes so far as to say that until some competent observer reports a case in which there is no doubt that the kidney was normal in every part, as demonstrated by serial section, we are justified in believing that idiopathic or essential hematuria does not exist Braasch[2] recently stated "I am under the impression that it would be difficult to assign any one cause to the variety of conditions which are grouped under the term 'essential hematuria'"

If the hematuria is the result of single or multiple diseases not far enough advanced to be diagnosed at the time of examination, it would seem that a review of cases followed for a period of years would reveal such disease or diseases sufficiently advanced so that the etiology in at least a part of them might be ascertained With this purpose, I have reviewed the cases of essential hematuria seen at the Mayo Clinic up to five years ago

The earliest of these cases was examined in 1907 and it would seem that in from five to twenty years the most insidious disease would have time to manifest itself Yet of 155 patients heard from, only six report the development of any definite renal disease In three cases calculi developed in two of these nephrectomy was necessary, and in the third the passage of a small stone relieved the symptoms In the three other cases nephrectomy was performed for unknown reasons, presumably because of persistent bleeding As mistakes in diagnosis were evidently made in these cases, it would seem that the condition diagnosed essential hematuria is not, as is so often claimed, the early manifestation of an impending serious pathologic process but rather the result of a less serious local disturbance This is further emphasized by the causes of death when it has occurred in cases of the series of 155 Death was caused by renal tuberculosis in one case, by uremia following splenectomy in one, by pulmonary hemorrhage in one, by pneumonia in three, by septicemia in one, by myocarditis in two, by internal hemorrhage in one, by congestion of the kidney following thyroidectomy in one, by insanity and senility in two, by carcinoma of the vagina in one, by paralysis in one, and by tuberculosis (region not stated) in one, and in five the cause was not stated These causes are certainly not attributable to any serious renal lesion of from five to twenty years' duration, and the mortality rate is too low to coincide with that of any grave renal disease of long standing

As 105 patients report that they are in good health, forty-four that they are in fair health and only six that they are in poor health at present, I believe we may dismiss the idea that the hematuria was caused by an early malignant growth or any other serious disease in its incipiency

Levy,[3] in a similar study of thirty cases, comes to the same conclusion, namely, that essential hematuria is not the early manifestation of impending disease, as in none of his cases did tuberculosis, tumor, calculus or nephritis appear Many urologists hold, however, that nephritis is the underlying cause of the bleeding

SUGGESTED CAUSES OF ESSENTIAL HEMATURIA

Nephritis—Hyman[4] explains essential hematuria on the basis of nephritis as follows

> Up to within a short time ago it was the exception rather than the rule to excise specimens from the kidney at operation for microscopic study, *no gross lesions being found* it was assumed that there were no organic changes Later on sections of the kidneys or the extirpated organ itself were subjected to careful microscopic examinations with the result that changes in the cortex indicative of a true nephritis were frequently found Thus, in time essential hematuria came to be considered a manifestation of a chronic nephritis

Fowler[5] cites a case of unilateral bleeding caused by chronic diffuse nephritis which was revealed at microscopic examination after nephrectomy, following the operation there was evidence of nephritis in the remaining kidney He believes that nephritis is responsible for essential hematuria in many cases, and that it may be either diffuse or circumscribed

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* From the Section on Urology Mayo Clinic

* Read before the Los Angeles County Medical Association Dec 1 1927

[1] Schenck B R Concerning So Called Essential Hematuria with Especial Reference to the Hematuria Accompanying Mild Grades of Nephritis Surg Gynec Obst **13** 68 73 1911

[2] Braasch W F Essential Hematuria Tr Am A Gen Urin Surg **19** 276-78 1926

[3] Levy C S Essential Hematuria A Clinical Study Surg Gynec Obst **34** 22 34 (Jan) 1922

[4] Hyman Abraham Notes on the Differential Diagnoses of Various Types of Renal Hematuria Am J Surg **34** 312 315 (Dec) 1920

[5] Fowler H A Nephritis and Haematuria Johns Hopkins Hosp Rep **13** 487 505 1906

Gaudiani[6] holds that all conditions described as hemorrhagic nephralgia are caused by circumscribed inflammatory processes and are so-called unilateral nephritis Casper[7] believes that nephritis is always bilateral and diffuse, and that the partial type results from old cured lesions He reports four cases in his series in which bleeding was due to chronic parenchymatous nephritis and in which the disease appeared in the remaining kidney after nephrectomy

Hagner[8] believes the bleeding is caused by early arterial changes in the kidney, not distinctly nephritic, and that if a series of cases could be followed to their termination, hematuria would be found to be due to arteriorenal disease

Spitzer[9] believes that nephritis cannot be held responsible and asks, "Why is there such profuse bleeding in essential hematuria when the pathologic changes are so slight, whereas in advanced nephritis with lesions a hundred times worse there is no hematuria?"

That the disease can hardly be of nephritic origin, as nephritis is usually understood, seems clear in this study Urinalysis, after departure from the Mayo Clinic, had been negative in forty-six cases, in eleven, blood, pus or albumin or combinations of these abnormal constituents had been noted, and in two cases there was sugar The patients, in reporting their conditions, mentioned many symptoms such as nervousness, constipation, backache, rheumatism and dyspepsia, but never edema and nocturia, and headache only in one case In fact, there was nothing that indicated the later development of serious nephritis The phenolsulphonphthalein test was made in 153 cases, it was never below 30 per cent, and averaged 51 65 per cent The urea content of the blood was determined in thirty-three cases and averaged 32 7 mg for each hundred cubic centimeters These data are hardly compatible with the existence of nephritis severe enough to produce bleeding In 199 cases blood pressure readings at the time of the original examination averaged 129 22 systolic and 79 52 diastolic In twenty-three cases in which subsequent examination was made, the systolic and diastolic pressures had increased more than 10 mm in only ten cases and had decreased in nine

That nephritis in various degrees of severity may be associated with essential hematuria is evidenced by the frequency with which it is found when microscopic examination of the kidney is made In this series, nephrectomy was performed in fourteen cases, in half of them nephritis was demonstrated, in three it was the only demonstrable lesion It is to be expected that associated nephritis will frequently be present, and I believe that some observers have erroneously attributed the hematuria to this cause

Chronic Passive Congestion—Spitzer and others believe that the prime cause of essential hematuria is passive congestion due to twisting of the renal pedicle, and cite cases cured by nephropexy The number of cases reported cured by decapsulation would favor this theory, which also explains the intermittent character of hematuria, the kidney having assumed a new position in times of remission

Rathbun[10] holds that the bleeding is due to chronic passive congestion resulting from scar formation from pyelonephritis, cortical abscesses which have healed, or infarcts produced by remote foci of infection The contraction of the cicatricial tissue impedes the circulation through the smaller vessels and causes varicosity and rupture, or the vessels rupture as a result of degenerative changes due to the impaired circulation Rathbun carefully studied sections of three kidneys removed at operation which showed such scarring If scarring is the cause of essential hematuria, it would serve to explain the successful results obtained either by decapsulation or by pelvic lavage with silver nitrate, depending on whether the ruptured vessels were in the parenchyma or adjacent to the renal pelvis

In this series, decapsulation was performed in six cases In one case death followed subsequent splenectomy, in the other five bleeding recurred, therefore, at the Mayo Clinic, this method of treatment may be considered a failure and the results certainly do not indicate that the disease is due to chronic passive congestion, since its symptoms are supposed to be relieved by decapsulation

Seventeen cases of essential hematuria were treated by nephrotomy This method, formerly popular because of the fair percentage of cures resulting, had the advantage of revealing any intrapelvic lesion which, if it consisted of localized hemorrhagic areas, could be treated by cautery However, it had the distinct disadvantage of often being followed by postoperative hemorrhage necessitating nephrectomy, this occurred twice in the present series and has also been reported by MacGowan[11] As the cauterization of the bleeding points can be accomplished as satisfactorily by cystoscopic methods, the operation is seldom deemed necessary today It is interesting to note that following this operation hematuria recurred in seven cases, twelve ten, seven, four and three years, and six months and one month later In no case in which nephrotomy or decapsulation was performed was there evidence of a twisted pedicle or other obstruction to the venous outflow In fourteen cases, nephrectomy was performed Anomalous renal vessels were noted in two of these cases as well as in two in which nephrotomy was performed, however, anomalous vessels are found in so many cases in which bleeding does not occur that they can hardly be considered of etiologic importance In three of the fourteen cases requiring nephrectomy bleeding recurred in the remaining kidney, an unfortunate complication that Young[12] reports in two of four cases in which nephrectomy was done for hematuria at the Massachusetts General Hospital, Patch[13] of Montreal has reported a case of the same kind

I consider nephrectomy as a last resort when all other methods of treatment have failed MacGowan, who is of the opposite opinion, says "The prognosis in these cases is always serious While considerable intervals between hemorrhages often occur, more frequently hemorrhages continue until they have exhausted the patient or until the offending kidney is removed" He believes that medical treatment is usually futile Levy, in reporting thirty cases, states that in only one was nephrectomy necessary to control the bleeding

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[6] Gaudiani V Sulla etiologia delle nefriti unilaterali Folia urolog **3** 570 582 1909

[7] Casper Ueber ungewohnliche Nieren und Nierenoeckenblutungen Arch f klin Chir **80** 350 393 1906

[8] Hagner F R Essential Hematuria, Tr Am A Gen Urin Surg **19** 278 1926

[9] Spitzer W M Continuous Painless Renal Hemorrhage and Its Treatment J A M A **63** 2110 2112 (Dec 12) 1914

[10] Rathbun N P Essential Hematuria, Tr Am A Gen Urin Surg **19** 253 273 1926

[11] MacGowan Granville Angioma of Papillae of the Kidney Ann Surg **51** 541 545 1910 Grave Renal Hematurias Due to Blood Vessel Changes in the Papillae with the Report of an Unusual Case Requiring Nephrectomy J Urol **9** 331 343 (April) 1923

[12] Young E L Jr Renal Hematuria as a Symptom of a Prenephritic Condition of the Kidneys Surg Gynec Obst **31** 478 486 (Nov) 1920

[13] Patch Frank Essential Hematuria Tr Am A Gen Urin Surg **19** 275 276 1926

In the present series 218 cases were treated medically or no treatment was instituted after cystoscopic examination had established the diagnosis In eighty-eight (65 41 per cent) of the 156 cases that have been followed there has never been a recurrence of the bleeding, and in forty it has recurred only once These results seem better than those of surgical treatment, as hematuria recurred in fifteen of the thirty-seven cases in which operation was performed

Papillitis—Many observers, especially those who have examined fresh specimens at the time of nephrectomy or nephrotomy, believe that so-called papillitis or angioma of the papillae explains the greater number of cases of essential hematuria Congestion of the papillae was observed in four cases in which operation was performed for essential hematuria at the Mayo Clinic Payne and MacNider[14] state that the hematuria is due to overdistention of the venous plexus of the renal papillae caused by infection with exudation and pressure on the veins at the base of the pyramids Cabot[15] reports a case in which the papillae were reddened and a little spongy On microscopic examination the small venules at the tip of each papilla were irregular and dilated, and their free surfaces were covered with a film of connective tissue and a single layer of epithelial cells Payne[16] reports similar observations, there were dilated capillaries in a network on the surface of all the papillae, many were ruptured, and free blood was escaping Quinby,[17] in reporting two cases in which nephrectomy was performed, says

> The source of hemorrhage in each case is obviously from the pelvis and from the tips of the pyramids In each instance hemorrhages are present within the peripelvic tissues, often occurring just beneath the epithelium, where for a considerable distance the epithelium has been elevated by a layer of extravasated blood

In one case there was no evidence of inflammatory reaction in the tissues of the pelvis or about the blood vessels, in the other, in addition to hemorrhages beneath the epithelium of the pelvis, there was a distinct inflammatory reaction and there were evidences of vascular injury At the margin of some of the hemorrhagic areas focal accumulations of polymorphonuclear leukocytes, fibrin, serous exudate, and proliferation of fibroblasts were seen

MacGowan reports cases in which the pathologic change was confined entirely to the papillae which were reddened and engorged He advocates removal of the papillae by a wedge-shaped incision

Randall,[18] in discussing essential hematuria, suggests that the congestion so frequently found at the papillae, termed angioma of the papillae or hemorrhagic papillitis, may be due to a spasm of a circular muscle at the base of the papilla producing engorgement and varicosity of the veins beyond The anatomists attribute to this muscle the function of actually milking the papilla, so that the urine is brought down by suction rather than by dripping out as was formerly supposed

The frequency with which essential hematuria is cured after the intrapelvic injection of either some pyelographic fluid or silver nitrate tends to confirm MacGowan's belief that papillitis is usually the cause of the bleeding In thirty-two cases in the present series, permanent cessation of bleeding followed pyelography

Infection—Many investigators have contended that the bleeding is the result of infection either in the papillae or elsewhere in the kidney Kretschmer,[19] in a review, quotes several authors who believe that infection is responsible for the bleeding, among them Maiocchi,[20] who says that "in practically all cases inflammatory or degenerative changes are to be found" and Gaudiani, who writes that "all cases described as hemorrhagic nephralgia are due to circumscribed inflammatory processes" Billings[21] reports two cases cured by colon bacillus vaccine, and White[22] suggests that the trouble may be due to the passage of bacteria through the blood to the urine

Because cultures of urine from the bleeding kidney are invariably sterile, little credence has been given to these theories Some years ago, while studying the relation of focal infection to pyelonephritis, Meisser and I injected a considerable number of rabbits with cultures obtained from the foci of patients with essential hematuria We never reproduced the disease, but we may have failed because we did not produce a chronic focus in the animals

In the operative cases in this series, except when the inflammation was confined to the papillae, only one case of pyelitis was noted There is, however, suggestive clinical evidence that focal infection plays a part in essential hematuria From 1918 to 1922, inclusive, tonsillar sepsis was noted in sixty-five and periapical infection in sixty-one of the 129 cases examined There were also cases resistant to all forms of treatment until foci of infection were removed, when the bleeding ceased Possibly this was coincidental, but a striking piece of clinical evidence was presented by a case in which hematuria persisted for two years but disappeared on the removal of a devitalized but apparently uninfected tooth which the patient had been unwilling to have extracted

Hemophilia—Blood dyscrasia has been considered a possible factor in essential hematuria Senator[23] reported a case in which the kidney removed at operation was normal both macroscopically and microscopically He considered the disease to be renal hemophilia Barringer,[24] following the original suggestion of Welch (Bienwald[25]), who used normal human blood serum in treating hemophilia neonatorum, suggests its use in essential hematuria and reports a case in which the bleeding ceased after the intramuscular injection of a relative's serum The patient's own blood has been injected intramuscularly in connection with other forms of treatment in many cases at the Mayo Clinic with gratifying results The possibility that essential hematuria might have some relationship to purpura hemorrhagica led Conner and me[26] recently to study thirty-three cases of essential hematuria, with particular attention to blood platelets, coagulation time, bleeding time, prothrombin time and the history of bleeding in other areas There was little evidence that essential hematuria is localized purpura hemorrhagica, except the low platelet counts, which averaged 136,000 for the group, about half the normal This observation suggests that the deficiency in platelets may have a bearing in some cases, especially in those benefited by the intramuscular injection of serum

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COMMENT

It would seem from this clinical study that essential hematuria is not the early manifestation of an impending disease but is caused by a minor local lesion, as described by Braasch in 1913,[27] which usually responds readily to cystoscopic treatment, although surgical intervention is occasionally necessary

The similarity of the disease to nose bleed in respect to seriousness, severity, recurrence and pathologic changes would seem to make the name renal epistaxis, given by its original describer, Sir William Withey Gull, more appropriate than essential hematuria, which does not signify anything concerning the location or etiology of the disease

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A SIMPLIFIED TECHNIC FOR ABDOMINAL PANHYSTERECTOMY

PRELIMINARY REPORT *

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For several years past I have been gradually perfecting a new operation for complete removal of the uterus by the abdominal route which possesses distinct advantages over the older procedures The perfected operation has been repeatedly demonstrated to members of the resident staffs of the Johns Hopkins Hospital, the Hospital for the Women of Maryland and the Union Memorial Hospital, all Baltimore institutions It has also been performed twice before visiting surgical societies at the Johns Hopkins Hospital

Pending completion of a survey of the literature and preparation of the artist's illustrations, the following preliminary outline of the operative steps is offered

TECHNIC OF THE OPERATION

1 Preliminary surgical toilet of the vulva, vagina, cervix and abdominal walls is first instituted

2 A lower midline abdominal incision is then made from the symphysis to the umbilicus

3 Adequate exposure and isolation of the pelvis through the Trendelenburg posture is secured, together with the proper disposition of wet gauze packs

4 The fundus of the uterus is grasped with an appropriate instrument and lifted well up

5 A transverse incision is made through the vesico-uterine peritoneum at the upper margin of its loose attachment to the uterus, and is carried laterally on each side to the uterine attachment of the round ligament

6 Into the angle of this incision on each side the index finger is introduced and burrowed bluntly through the loose areolar tissue of the broad ligament, perforating its posterior layer close to the uterus below the level of attachment of the round ligament, the fallopian tube and the utero-ovarian ligament

7 This aperture is bluntly enlarged sufficiently to permit the approximation of these three structures to form a single pedicle, to which two clamps are applied and the appendages divided between them close to the uterus

8 Transfixing ligatures replace the two clamps on the severed appendage stumps, while the two applied to the lateral angles of the uterus are henceforth used as tractors, the original instrument applied for uterine elevation now being removed

9 Traction upward on the uterus now brings clearly into view the skeletonized uterine vessels, which are clamped and divided on each side at or above the level of the internal os Ligatures now replace the clamps on these vessels, care being exercised not to include any cervical tissue in passing the needle

10 The severed uterine vessels are bluntly dissected away from the cervix down to the thick basal segment of the broad ligaments

11 The uterus is lifted strongly upward, and the bladder is now separated by blunt dissection from the cervix and vagina well down below the level of the external os

12 The uterus is now drawn strongly upward and forward, and a transverse incision is made through its posterior peritoneum 1 cm above the level of the attachment of the two uterosacral ligaments, the lower peritoneal flap resulting is dissected free from the cervix sufficiently to permit introduction of the left index finger With the application of blunt dissection to the posterior surface of the cervix, the peritoneum is now fully freed from the cervix and lower down the rectum from the vagina below the level of the external os Bleeding does not occur in this step, if the dissection is not carried laterally on each side into the broad ligament zone

13 When the uterus is well lifted up, the two index fingers may be readily apposed below the vaginal portion of the cervix through the anterior and posterior vaginal walls, respectively

14 The two uterosacral ligaments are now clamped, divided and ligated

15 The dense basal segment of the broad ligament, together with the adjacent vascular plexus, may now be easily grasped close to the cervix with a single clamp divided and securely ligated, the clamps being removed If the cervix is elongated this step may have to be repeated at a lower level

16 The vaginal vault now is drawn up into plain view on all sides It is incised anteriorly, and promptly balloons The incision is carried round the cervix, four artery clamps being applied to the vaginal vault one anteriorly in the midline, one laterally to each angle and one posteriorly in the midline as the uterus is lifted out, without the cervix at any time having come in contact with any intrapelvic tissue, and without any annoying bleeding

17 Special angle sutures now replace the two angle clamps as follows The needle is first passed through the anterior vaginal wall and into the lumen of the vagina 1 cm mesial to the angle, it now twice transfixes the stump of the basal portion of the detached broad ligament, forming within it a liberal mattress suture loop, from here it again enters the lumen of the vagina, passing through its posterior wall close to the angle and also transfixes the stump of the uterosacral ligament When tied, this suture closes the lateral vaginal angle and snugly apposes to it for support both the strong basal portion of the broad ligament and the uterosacral ligament

18 Further complete or partial apposition of the anterior to the posterior vaginal wall by suture, depending on whether or not drainage is to be employed, is now quickly executed

19 A single mattress suture on each side now first engages the closed vaginal vault anteriorly and mesially to the angle suture, transfixes the stumps of the round and utero ovarian ligaments, and passes back to engage the posterior vaginal wall opposite the point of entrance When tied, this suture snugly apposes the round and utero-ovarian ligaments to the vaginal vault

20 The vesico-uterine peritoneum is now neatly sewed to the posterior peritoneal flap, leaving the pelvis completely peritonealized with the vaginal vault and the ovaries strongly supported

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* From the gynecologic department of the Johns Hopkins University and Hospital

Adequate illustrations of this operation, together with a discussion of its advantages over procedures hitherto employed for complete extirpation of the uterus by the abdominal route, will appear in a later communication

9 East Chase Street

PNEUMOCOCCUS MENINGITIS

RECOVERY WITH SERUM THERAPY

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Contrary to the accepted belief, pneumococcus meningitis is not uniformly fatal The contradictory statements on this subject are apparently due to the individual experiences of various writers For example, Kolmer[1] reports a mortality of 100 per cent in fourteen cases, arising from the ear, from the accessory sinuses or from no determinable focus Schottmuller[2] reports 100 per cent mortality in 100 cases Jochman[2] records a similar experience Lubarsch, on the other hand, considers that 1 per cent of the patients recover, whereas E Frankel places the percentage of recovery at 2 Isolated instances of recovery are contained in the French literature of the past decade Devic and Dechaume[3] quote a case of Cruveilhier in which recovery followed the injection of 200 cc of antipneumococcus serum Halle[4] also records a case with favorable outcome following the use of antipneumococcus serum and the establishment of fixation abscess by means of oil of turpentine No culture of pneumococcus was obtained from the spinal fluid, but two or three diplococci were seen in the smears Numerous gram-positive encapsulated diplococci were isolated from the patient's sputum but were not agglutinated by specific serums Halle ascribed the recovery either to infection with a special type of avirulent pneumococcus, as inoculations of mice with the spinal fluid did not prove fatal, or to the small number of invading bacteria

Netter and Cesari[5] reviewed two series of cases In the first they found records of three recoveries in forty-two cases, and in the second, six recoveries in sixty cases These authors record a case of infection with pneumococcus type 2 treated by antipneumococcus serum plus fixation abscess, the latter being employed because of uncertainty, as Netter states, of the efficacy of pneumococcus serum Other instances of recovery reported by Parkinson,[6] Culper,[7] Cuming,[8] Rosenow[9] and Campbell[10] are more extensively quoted by Globus and Kasanin[11] Ratnoff and Litvak[12] report a case of pneumococcus meningitis in which direct smears and cultures from the spinal fluid yielded gram-positive encapsulated diplococci "interpreted as type 3" The patient did not respond to the treatment with the antipneumococcus serum but recovered after the use of ethylhydrocupreine (optochin) hydrochloride These authors discuss the experiences of Morgenroth and Levy,[13] Moore and Cohen,[14] Kolmer and Heist[15] and Kolmer and Idozumi[16] with the use of this drug in the treatment of pneumococcus meningitis According to Kolmer and Idozumi, ethylhydrocupreine is most effective when used early in the disease by the intraspinal route Ratnoff and Litvak also quote Bohneke[17] to the effect that small doses of ethylhydrocupreine markedly increase the efficacy of antipneumococcus serum This fact has recently been reestablished by Stewart[18] in the treatment of experimental pneumococcus meningitis in dogs

In contrast to the authors mentioned, there are others who report recoveries of patients with pneumococcus meningitis without the use of serum or of drug therapy In these cases drainage by repeated lumbar puncture or by cisternal puncture as employed by Globus and Kasanin,[11] or by laminectomy as advised by Leighton and Pringle[19] and others, has been the sole method of attack Although these methods of drainage seem to be effective aids in some cases, the fundamental problem is to influence the disease by means of specific serum therapy, when the diagnosis has been established after careful cultural investigation

Study of the literature leaves one at times confused as to the exact type of organisms dealt with by some authors On the finding of encapsulated diplococci in smears from the spinal fluid and the isolation of pneumococci from the sputum, they base the unwarranted conclusion of the identity of the two organisms

Instances of recovery are also recorded after one or two lumbar punctures without any other form of treatment whatever—presumably cases of transient invasion of the meninges by organisms of very low virulence in a highly immunized individual in whom drainage has assisted in rapid dispersion of the bacteria On the other hand, cases are cited wherein repeated lumbar punctures are without avail This in all probability is due to the occurrence of encapsulated bacterial foci in one or more areas of the subarachnoid space which act as sources of reinfection, with ultimate breaking down of the systemic resistance by successive invasions of the host

Bearing in mind the possibility of varied localization and multiplication of bacteria in the different regions of the brain in the course of the disease, the important objective, so ably demonstrated by Stewart in his experiments on meningitis in dogs, is to bring all the regions of the meninges into frequent contact with the therapeutic agent employed This he accomplishes by a method of a quadruple puncture, in which he employs ethylhydrocupreine-serum mixtures In his opinion absence of such contact causes incomplete sterilization, and "reinfection" is almost inevitable His protocols also show the necessity of securing repeated cisternal fluids, negative both on smear and on culture, before complete sterilization can be assured The clinical application of some of these experimental facts, as will be seen, have been demonstrated in a case of pneumococcus type 1 meningitis that came under our observation

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REPORT OF CASE

History—A married woman, aged 57, with an essentially negative past history except for some pelvic operation two years before developed an upper respiratory infection, May 30, 1927 Two days later she complained of pain in the right ear, which, after twelve hours, was followed by perforation of the right ear-drum and the discharge of a small amount of pinkish fluid No real pus was observed The ear was irrigated for several days

Two days after the perforation of the ear-drum, the upper respiratory infection increased in severity About the same time, periods of delirium developed There was mild headache There was no vomiting No convulsions or muscular twitching were observed The temperature on this day rose to 105 F The patient was seen, June 3, 1927, at which time her chief complaints were headache, dizziness and progressive drowsiness

Physical Examination—The pupils were rather small, were contracted, and reacted sluggishly to light The fundi showed moderate congestion The tongue was coated, the pharynx was congested, and a plug of mucopus covered the pharyngeal vault The neck was slightly rigid The Kernig and Babinski signs were present on both sides The knee jerks were definitely diminished Abdominal reflexes were present Examination of the lungs showed crepitating rales at the right base but no bronchial breathing and no dulness On account of the shallow respiration, these signs were interpreted as due to partial atelectasis Examination of the ear-drums by Dr Friesner disclosed hemorrhagic blebs on the left ear-drum with a thin serous discharge He did not consider the meningitis secondary to the infection in the ear but believed both to be the result of the upper respiratory infection

Course of the Disease—June 5 40 cc of cerebrospinal fluid was withdrawn by lumbar puncture The spinal fluid contained numerous polymorphonuclear cells Spreads showed gram-positive diplococci, two or three to a field Cultures yielded a pure strain of bile-soluble, gram positive diplococci This organism was agglutinated by specific serums and found to belong to pneumococcus type I Eight hours later another lumbar puncture was performed At the same time 35 cc of Felton's type 1 antipneumococcus serum was introduced intraspinally and 15 cc intravenously

June 6, 40 cc of cerebrospinal fluid was removed by lumbar puncture, 30 cc of serum was injected intraspinally and 10 cc intravenously Gram-positive diplococci, which failed to grow on transplants, were again isolated from this spinal fluid

June 7, lumbar puncture yielded only 4 cc of cerebrospinal fluid This small quantity was ascribed to the development of meningeal adhesions For this reason no serum was injected intraspinally, but 10 cc. was given intravenously

June 8 the temperature fell to 101 2 No puncture was attempted

June 9, the temperature rose to 104 2 Lumbar puncture resulted in a dry tap A cisternal puncture was therefore performed by Dr Globus, 60 cc of turbid fluid was withdrawn and 15 cc of serum injected intracisternally On cultures the aspirated fluid yielded pneumococcus type 1 The fluid contained 4 000 cells per cubic centimeter Blood count revealed total leukocytes, 10,900, polymorphonuclears 76 per cent, lymphocytes, 22 per cent mononuclears, 2 per cent

June 10, at 11 30 a. m 40 cc of turbid fluid was removed by cisternal puncture The cell count was 3 700 per cubic centimeter No organisms appeared on culture At 8 45 p m cisternal puncture was again done, 45 cc. of turbid fluid being withdrawn, and 15 cc of serum being injected intracisternally and 20 cc. of serum intravenously at the same time. Cultures were again negative

June 11 lumbar puncture was successfully performed and 50 cc of fluid withdrawn This contained 3 000 cells per cubic centimeter with 95 per cent polymorphonuclear leukocytes 20 cc of serum was injected intravenously Cultures from the cerebrospinal fluid were sterile

June 12, 35 cc of fluid was withdrawn by lumbar puncture, 20 cc of serum was introduced intravenously Culture of the fluid was sterile. The cell count of the cerebrospinal fluid was 1 840 cells per cubic centimeter, of which 95 per cent were polymorphonuclear leukocytes At 6 30 p m, 20 cc of fluid was withdrawn by lumbar puncture

June 13, 40 cc of fluid was withdrawn Culture was negative The cell count of the cerebrospinal fluid showed 1,000 cells per cubic centimeter The proportion of polymorphonuclear leukocytes was unchanged

June 14, 55 cc of slightly turbid fluid was withdrawn The culture was sterile A total cell count was not done because of the presence of red blood cells The polymorphonuclear cells had fallen to 56 per cent, the remaining cells being lymphocytes The patient complained of pain in the right thigh This was found to be due to herpes zoster over the right buttock. There was also present a blotchy erythematous rash over the right forearm and a diffuse papular rash over the abdomen and the breasts The eruption was interpreted as being due to serum sickness

June 15, at 10 a m, the papular erythematous rash spread over the entire body, with the exception of the face, 35 cc of culturally sterile spinal fluid was withdrawn

June 18, lumbar puncture yielded 35 cc of almost clear fluid The cell count showed 30 cells per cubic centimeter

June 19, the patient complained of pain on micturition The urine showed numerous pus cells and erythrocytes Cystitis, apparently the result of catheterization, which had to be employed in the early stages of her illness had developed

June 20, the serum rash had disappeared

The temperature fell to normal and the patient was discharged from the hospital July 3 perfectly well all physical signs having disappeared At no time were evidences of frank pulmonary involvement demonstrable

SUMMARY

During the course of illness the following features of note presented themselves

1 Sterilization of the cerebrospinal fluid after the first injection of Felton's serum

2 Development of a temporary block in the lumbar region probably due to adhesions, resulting in a dry tap

3 Reinfection characterized by a rise in temperature and by the recovery of pneumococcus type 1 from the cisternal fluid

4 Introduction of serum intracisternally with prompt sterilization of the cerebrospinal fluid Cultures from the subsequent specimens of fluid obtained by daily lumbar puncture did not yield organisms

5 Occurrence of serum sickness on the fourteenth day of the illness

6 Negative results of two blood cultures taken during the course of the illness

CONCLUSIONS

In a case of pneumococcus type I meningitis, definitely diagnosed as such on the third day of the disease, Felton's[20] serum was employed with a favorable outcome From a survey of the literature it is difficult to state definitely that any one method of treatment is the method *par excellence,* nor does the experience acquired in one case justify any broad generalization Yet our own clinical observations and those of others would lead one to the following conclusions

1 The early diagnosis and the identification of the invading organisms is of supreme importance

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[20] The serum used in this case of meningitis which was kindly supplied by Dr Jesse G M Bullowa of the Harlem Hospital was prepared in *1927* and was relatively free from lipoids and other chill producing factors It was processed at icebox temperature and was refined by Dr Felton at Harvard University on serum developed by Dr William H. Park at Otisville from horses provided by the Littauer Pneumonia Fund of New York University

2 Specific serum therapy employed should be definitely potent and should be promptly instituted

3 The serum should reach all foci of infection in the subarachnoid space Where adhesions are suspected it should be administered intracisternally as well as intraspinally

4 Drainage of the cerebrospinal fluid by both routes is an essential aid

1112 Park Avenue

PNEUMOCOCCUS (TYPE IV) MENINGITIS

REPORT OF A CASE TREATED BY FORCED SUBARACHNOID DRAINAGE, WITH RECOVERY *

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AND
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Instances of recovery from pneumococcus meningitis are admittedly exceedingly few Kolmer[1] goes so far as to say that the mortality of acute diffuse purulent pneumococcus meningitis and streptococcus of otitic or nasal origin is more likely to be 100 per cent, when treatment consists of the usual methods of spinal puncture and intraspinal injections of antistreptococcus and antipneumococcus serum He is frankly skeptical of the few reported recoveries in cases of pneumococcus meningitis, for in his own experience he was unable to accomplish much more than prolonging life And then again, in two patients who recovered from so-called pneumococcus meningitis who came under his observation, a bacteriologic study disclosed the meningococcus organism as the causative agent Thus he concludes that many of the reported cures in pneumococcus meningitis were instances of mistaken diagnosis

But a careful survey of the literature yields a small series of cases in which reliable bacteriologic examinations have revealed the pneumococcus as the causative organism These instances, though few, establish the fact that recoveries in pneumococcus meningitis are possible, some of them taking place spontaneously while others occur in response to one or another therapeutic measure

Parkinson[2] reports a case of pneumococcus meningitis that developed in the course of a pneumonia The cerebrospinal fluid revealed *Diplococcus lanceolatus,* with the characteristic capsule on smear and in culture Meningeal signs were present for five weeks, but as the pneumonia began to resolve, the meningeal manifestation began to recede, and ultimately spontaneous recovery resulted Such a recovery without any therapeutic intervention is one of a few similar instances in which the meningeal involvement occurred in the course of pneumonia It is quite probable that a partial immunization was produced by the coexisting pulmonary infection, which served as a determining factor in the spontaneous recoveries This is well shown by Stewart[3] in his studies on the experimental production of pneumococcus meningitis

Cupler[4] describes three cases of pneumococcus meningitis, of unknown origin, in which the organism was definitely identified While he does not describe the methods he employed for the bacteriologic study, there is no reason to discredit his statement that the pneumococcus was the causative agent In one of the group there was full recovery, and subarachnoid drainage (though only four lumbar punctures were done) was regarded as being responsible for the cure

In Cumming's[5] case the pneumococcus was found on smear and in cultures This diagnosis will very likely not be accepted without challenge, since the first culture was contaminated by staphylococci, though subsequent attempts yielded pure cultures of pneumococcus The patient was given ten intraspinal injections of antipneumococcus serum Gradual and complete recovery followed

Brown[6] regarded his case at first as an instance of meningococcus meningitis and treated it as such, but as soon as the bacteriologic study was completed and the pneumococcus was identified, the patient was given five injections of pneumococcus vaccine with good results

Rosenow's[7] case is an instance of pneumococcus meningitis proved by careful bacteriologic studies The meningeal signs developed in the course of a general infection following an abortion Two injections of ethylhydrocupreine hydrochloride brought about full recovery

Campbell[8] describes briefly a case in which cerebrospinal fluid was reported to reveal on smear and in culture the pneumococcus organism Repeated lumbar punctures resulted in gradual improvement, but there soon appeared signs of cerebral abscess The latter was found and drained Slow and complete recovery took place

In Ervin's[9] case of pneumococcus cerebrospinal meningitis, the author's statement must be accepted that it was possible to demonstrate in the spinal fluid a gram-positive diplococcus with capsule, which proved to be pneumococcus His patient was given Huntoon's pneumococcus antibody solution intradurally and intramuscularly in addition to repeated lumbar punctures Recovery followed

While this small series of cases does not exhaust all the recorded recoveries from pneumococcus meningitis, it, as well as our own case, serves to discount the common belief that pneumococcus meningitis is always fatal

REPORT OF CASE

History—L E a schoolboy, aged 15 years, admitted to the hospital, Jan 25, 1927, had had the common diseases of childhood without sequelae, and at the age of 11 years had undergone an intranasal operation (submucous resection) His present illness dated back to two weeks before admission, when a sudden discharge began from both ears This was not associated with pain and lasted only one day He then remained apparently well for the next ten days, but two days prior to his admission to the hospital he began to complain of pain in the left ear The ear did not discharge Twenty-four hours later his temperature began to rise, and intense headache developed He vomited several times and gradually went into a stupor

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[9] Ervin C E Pneumococcus Cerebrospinal Meningitis with Recovery Atlantic M J **28** 590 (June) 1925

Examination—The patient was well developed and well nourished He was drowsy and flushed The temperature ranged from 103 to 106 F There was marked retraction of the neck and a bilateral Kernig sign The knee jerks were present, the pupils were round and equal, and reacted well to light and in accommodation There were no localizing signs of cerebral involvement

Course—Lumbar puncture was done immediately after admission It yielded 60 cc of turbid fluid, containing 12,000 cells per cubic millimeter, with 96 per cent polymorphonuclear neutrophils A smear of the centrifugalized cerebrospinal fluid showed many gram-positive diplococci A culture of the spinal fluid taken at the same time revealed later a pure growth of pneumococcus, which on typing was found to be of group IV The blood count showed 30,000 white blood cells per cubic millimeter, with 90 per cent polymorphonuclear neutrophils The urine contained a faint trace of albumin The blood Wassermann reaction was negative The ears were examined by an otologist and were found to be apparently normal, with all the landmarks intact In spite of this, however, the case was regarded as an instance of acute pneumococcus meningitis of otitic origin, and it was felt that the only therapeutic measure of promise available was drainage of cerebrospinal fluid Accordingly, frequent lumbar punctures were carried out For the first ten days, punctures were made three times a day each time, with the fluid flowing freely, from 30 to 60 cc. was usually withdrawn Repeated cultures of the cerebrospinal fluid were taken, January 30 and February 6, and showed, as on the first occasion, pneumococcus type IV, the blood culture remained consistently negative The patient's temperature for the first few days varied between 102 and 105, and usually would decline somewhat soon after a lumbar puncture to rise again, however, within short time At the time of admission, when the causative organism was still unknown, the patient was given one intraspinal injection of antimeningococcus serum, but as soon as the true causative agent was discovered from the cultures the serum injections were abandoned and intensive drainage of the subarachnoid space was continued February 11, at the end of the first two weeks of the patient's residence in the hospital, his condition suddenly declined The temperature rose to 104, and the fluid once again became thick and sanguinopurulent, with signs ot meningeal irritation becoming more prominent. The following day (February 12) all efforts to obtain spinal fluid by the lumbar route failed Adhesions had apparently formed at the point of puncture and given rise to a block. February 13, a cisternal puncture was done for the first time, 50 cc of yellow turbid fluid was obtained There were 960 cells per cubic millimeter, with 76 per cent polymorphonuclears The temperature dropped and the patient was more comfortable. The rigidity of the neck diminished Another cisternal puncture was done, February 15, and the fluid was still xanthochromic, but the number of cells dropped to 180 per cubic millimeter The temperature was still down and stayed down until February 17, when it began to rise again, another attempt to obtain cerebrospinal fluid through lumbar puncture was made, but only after air was injected into the subarachnoid space was a free flow of fluid produced The injection of air was carried out in the hope of breaking up the adhesions This resulted in immediate relief, and the patient continued to improve until March 1, when quite suddenly the temperature rose to 104 and the meningeal signs reappeared On the subsequent day two other cisternal punctures were done with resulting improvement, the temperature returning almost to normal For the first time the spinal fluid was reported sterile

In spite of the continued improvement and the freedom from meningeal signs the patient continued to have an elevation of temperature in the afternoon with a mild rise to 101 Because of this condition, and in an attempt to avoid productive inflammatory changes in the meninges, intravenous injections of *Staphylococcus pyogenus-aureus* vaccine were thought to be advisable March 3 the first dose of 50 million organisms was given Four injections altogether were administered, the last dose, consisting of 150 million organisms being given, March 11 Each injection was followed by a febrile reaction

From that time on the patient became afebrile and his convalescence progressed uneventfully He was discharged, April 4 He was able to walk around and was almost totally free from meningeal signs, though there was still some tenderness over the lumbar spine, and pain was elicited on testing for the Kernig sign Repeated examinations of the fundi throughout the clinical course did not show any abnormalities, and ear examinations did not reveal any evidence of involvement of the drums It is noteworthy that in spite of the protracted and the often unusually high temperature the patient did not at any time show toxic or psychic manifestations

During March, 1927, a slight weakness of the left ankle was noted A Kernig sign was not elicited This weakness of the ankle improved gradually, so that at present he is fully restored to health, and participates in all outdoor activities in the country, where he is convalescing now

When seen recently (Sept 15, 1927) eight months after the onset of the illness, the patient was found to be free of any signs or symptoms, and was active at his work

COMMENT

In presenting this case, our aim is not only to put on record one more unusual recovery from a fully established case of pneumococcus meningitis of otitic origin, but also to stress the value of intensive subarachnoid drainage, one of the two outstanding measures in the treatment of septic meningitis, the other being serum therapy While the former was used almost exclusively in our case, fifty lumbar and six cisternal punctures having been made, serum was employed in another instance

It is obvious from the small series of cases here reviewed, and from general discussions on the subject, that subarachnoid drainage is an important and valuable measure Its service, however, is dependent to a large degree on the intensity and frequency with which it is employed in a given case, since its value lies in insuring the removal of large quantities of fluid at frequent intervals To attain this, several methods are available Frequent lumbar punctures, the earliest methods of approach, have not yielded uniformly good results There are several reasons for this The frequent traumatization of a small circumscribed area of the leptomeninges at the point of puncture often leads to local adhesions and block, thus defeating the purpose of this procedure exclusively Then again, each additional puncture through the intravertebral disk becomes more and more painful, finally arousing the protest and resistance of the patient

To obviate possible adhesions and to insure continuous drainage, laminectomy and the insertion of rubber tubing was tried Leighton and Pringle,[10] Hill[11] and somewhat later Rainey and Alford[12] reported some cures by this method According to these authors, however, it is useful only in streptococcus and staphylococcus infection Besides, it appears to us a somewhat formidable procedure that is hardly justified by the few reported beneficial results

For a similar purpose Dandy[13] offers his method of continuous drainage by the cisterna magna route to be employed only in the treatment of meningitis in which the infecting organism is staphylococcus and streptococcus His method approaches the character of a major operation, and a less formidable measure of proved value is available

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[10] Leighton W E and Pringle J A Recovery in Two Cases of Streptococcus Meningitis Following Lumbar Laminectomy and Drainage J A M A 64 2054 (June 19) 1915

[11] Hill Roland Laminectomy for Meningitis Surg Gynec Obst 33 288 (Sept) 1921

[12] Rainey W R and Alford L B The Treatment of Septic Meningitis by Continuous Drainage J A M A 81 1516 (Nov 3) 1923

[13] Dandy W E The Treatment of Staphylococcus and Streptococcus Meningitis by Continuous Drainage of the Cisterna Magna Surg Gynec. Obst 39 760 (Dec) 1924

Thus, combined and alternating lumbar and cisternal punctures provide ample means for fairly constant drainage Cisternal puncture in the hands of the experienced offers practically no inconvenience for the patient, it is less apt to produce adhesions, and it can be repeated as often as necessary As no rigid structures are passed by the needle and since mild local anesthesia makes the puncture almost painless, it can be employed with a frequency to insure almost continuous drainage

Nevertheless, though this method gave good results in our case, it is not recommended to the full exclusion of any other therapeutic measure In fact, we believe that in selected cases serum therapy is of advantage when used in combination with the suggested form of subarachnoid drainage

1125 Park Avenue

MEDICAL ASPECTS OF COLITIS *

WILLIAM J MALLORY, M D
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Colonic disease occurs in tuberculosis, syphilis, amebiasis, neoplasms, achylia gastrica, pernicious anemia, sprue, pellagra, exophthalmic goiter, Addison's disease, actinomycosis, chronic uremia and mercury and arsenic poisoning In the present discussion, these diseases will be omitted from consideration

The form of colitis to be discussed here may be defined as a condition of the colon, beginning with evidences of irritation, especially the descending and sigmoid portions, occurring usually after the age of 30, and passing through repeated relapses and several stages of increasing severity to actual inflammation and ulceration

It is characterized by constipation of the spastic type, alternating with explosive attacks of diarrhea, with painful abdominal cramps and the passage of mucus In long standing cases, blood and pus may be present Reflex gastric disturbances are a part of the symptomatology

No one specific cause is known, though the following factors are generally recognized as contributory to its development First and most important is a spastic condition of the colon (vagotonia), which appears to occur without other intra-abdominal disease but may be exaggerated by such conditions as enteroptosis, coloptosis, nephroptosis, and chronic disease of the gallbladder, appendix, or pelvic organs The relation of colitis to the neuroses is recognized even by conservative clinicians in their reference to the influence of the vegetative nervous system and the glands of internal secretion External factors, such as produce emotional stress, fatigue, overheating and chilling, are known to precipitate attacks, or when they are present to increase their severity In women, attacks are more common at the menstrual period

Recently, food allergy,[1] a sensitization to certain articles of diet, has been described as a cause, and several cases have been cured by abstinence from the specific foods However, it should be noted that all foods producing a skin reaction did not produce colonic disturbance

The relation of the condition to a constitutional defect was recognized long ago by Strumpell, who spoke of mucous colitis as "asthma of the colon"

In the early stages, proctoscopic examination shows a dry, glazed mucous membrane, with large and small patches of tough, leathery mucus attached These are removed with difficulty and sometimes cause bleeding The mucus contains a great deal of calcium phosphate and calcium oxalate, sometimes in the form of "intestinal sand," white blood cells and sometimes red blood cells

In the later stages, ulceration, fibrosis, adhesions, diverticulitis and pericolitis develop, and mucus, pus and blood appear in the feces

The real significance of the symptoms can be appreciated only if one studies in chronological sequence the various phases during remissions and relapses, and not by simply describing the various separate features This leads one through the consideration of three conditions usually described as separate entities, namely, spastic constipation, mucous colitis and ulcerative colitis

The suggestion is offered that these are simply different stages in one disease process I do not know of any writer who has said this in so many words, but I am convinced that such is the case, because the contributions to the study of disease by internists,- roentgenologists[3] and gastro-enterologists[4] are consistent with this conclusion

Adolph Schmidt delimited spastic constipation and indicated a rational physiologic treatment Stockton[4] writes

> A common result of vagotonia is spastic constipation predisposing to sigmoiditis and mucous colitis It (mucous colitis) often follows and is always accompanied by spastic constipation There are two factors that stand out conspicuously as related to mucous colitis the first is spastic constipation and the second is enteroptosis
>
> Colitis is essentially an inflammation of the lining of the colon, a result of infection Chronic constipation especially delay at the cecum, sigmoid and the hepatic flexures, are counted as contributory factors through causing irritation Inflammation follows when pathogenic bacteria are present and when the immunity of the individual is lowered
>
> A vagotonic state of the colon inducing overtonicity, or spasm, exciting unnatural secretion of the mucous lining favors the advent of infection For reasons not yet fully known the ordinary intestinal flora become pathogenic, or the cause may be attributed to harmful organisms yet to be recognized

It is therefore more logical to approach this subject in discussion, as well as in actual practice, by considering the symptomatology and treatment under three phases or stages, even though infection, specific or otherwise, may be a final stage Naturally, every individual case does not pass through all stages

STAGE 1 SPASTIC CONSTIPATION

Spastic constipation is characterized by the passage of dry, hard faceted masses of feces, not containing any remains of recognizable food (complete digestion) The particles are usually covered with more or less mucus, usually tough and membranous The fecal bolus often falls apart in the commode and even resembles sheep or rabbit droppings

The roentgenogram, after a contrast meal, shows spasticity of one or more portions of the colon The

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Read before the Medical Society of the District of Columbia, Oct 19 1927

[1] Hollander Edward Mucous Colitis Due to Food Allergy with a Report of Few Cases Am J M Sc **174** 495 (Oct) 1927

[2] Schmidt Adolph Klinic der Darmkrankheiten Weisbaden J F Bergmann 1913

[3] Kantor, J L Colon Studies III Am J Roentgenol **16** 1 9 (July) 1926

[4] Stockton C G Oxford Medicine New York Oxford University Press **3** 247 258, 1921

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[illegible] Medical [illegible]

barium enema may not demonstrate the condition so distinctly

The sigmoid is palpable, firm and tender, pressure often producing reflex pain on other parts of the abdomen

Laxatives frequently fail to act when given in the usual dose, and when the dose is increased, or a strong purgative is used, cause cramps and an explosive diarrhea which in turn is again soon followed by an attack of constipation Liquid petrolatum often trickles through the bowel without producing an evacuation So-called laxative food, such as coarse bulky, cellulose bran containing roughage or salads, like the purgative often cause cramps gastric disturbance and ultimately diarrhea

The condition, even at this stage, is notably influenced by external conditions, as cold, fatigue, emotional stress, excitement, and social or business stress, and various other features commonly accepted as evidence of nervous and vasomotor disturbances, are presented

During this stage, the patient usually treats himself according to popular notions with coarse food, little meat, ' nature's remedies," purgatives, enemas, cascades, massage and "plenty of exercise," and is often an habitue of some "colon filling station "

When he consults the physician it is for "indigestion", that is, gas in the stomach, eruction, pain about the heart, headache, fatigability and symptoms of eye strain, common evidences of autonomic imbalance Needless to say, treatment of the "stomach" and the digestive process will not give any relief

The proper management of this stage of the disease is just the opposite of the popular method of treating constipation, namely, a bland diet (no roughage), sedatives, carminatives, hydrotherapy in the form of hot packs or hot baths, and very moderate exercise or rest There should not be any enemas (except the nightly instillation of liquid petrolatum or gelatin solution), any deep massage of the bowels, or any irrigations The establishment of normal hygiene in eating and in regular defecation should be encouraged I have known patients with marked constipation and abdominal symptoms to enter the hospital for a survey, and while in bed on a bland diet to have regular voluntary bowel movements without laxatives or enemas

STAGE 2 MUCOUS COLITIS

Mucous colitis has been described so fully and so well that reference to a standard work is sufficient[4] Stockton distinguishes spastic constipation from mucous colitis, but says that "this condition should be regarded not as a definite disease, but as a syndrome dependent upon one or more etiological factors not always clearly defined "

Mention of the following principal features is sufficient to recall the symptomatology

1 Mucous colitis often follows and is always accompanied by spastic constipation
2 There is a characteristic discharge of mucus
3 Paroxysmal attacks of pain with abdominal distress occur, associated with disturbances in other regions, for example, anginoid attacks
4 Alternating constipation and diarrhea are present

What should be repeatedly emphasized is this The critical attacks of mucous colitis have been diagnosed as acute surgical diseases of the abdomen, and, on the basis of abdominal pain, tenderness rigidity, slight fever, slight leukocytosis and vasomotor phenomena, operations have been performed The diagnosis of the condition in this stage depends on an acquaintance with the characteristic history, as well as the prompt response of the patient to physiologic therapy

The treatment of this condition is the same as that already given for spastic constipation, in addition, rest is more strictly enforced and calcium lactate and acidophilus milk have seemed to be of definite value

STAGE 3 ULCERATIVE COLITIS

The principal features of the third stage are diarrhea, alternating with shorter periods of constipation There is usually irregular bowel action, with stools varying in consistency from mushy to hard and lumpy In advanced cases the diarrhea is persistent and frequent, and sometimes (when proctitis is present) is accompanied by tenesmus Mucus, pus and blood are present in the feces, and sometimes are passed alone The abdomen is generally sore, and especially tender over the colon area There is pain, soreness and tenderness across the abdomen and in the left side, especially noted in the early morning hours and also after meals, as the digestion of food stimulates colonic peristalsis, fever is present at times Reflex gastric disturbances inhibit adequate food intake, and nutrition becomes impaired Roentgen-ray examination, both with the barium meal and with the enema, gives a characteristic picture Haustral markings are indistinct or obliterated, and there is a "feathery" or flaky distribution of the barium On proctoscopic examination, ulcers are found

The major indication at this stage is the prevention of the intercurrent attacks of constipation Therefore, opium and astringents by mouth are contraindicated The Schmidt test diet should be used to determine the kind and degree of impairment of the digestion, if any, and a strictly bland diet ordered in accordance with the observations It is futile to withhold food or to prescribe a diet of soups and broth, feces will be formed in any case, and the aim should be to keep them large and soft Enemas should be avoided, purgatives are a direct trauma The bowels will move if spasm is controlled Therefore, strict rest in bed, the application of hot wet packs or poultices to the abdomen, and the giving of sedatives and carminatives in full doses are in order Liquid petrolatum or gelatin solution may be instilled, to be retained over night The use of an agar preparation is of value in preventing the formation of small, hard, scybalous feces Calcium lactate in adequate dosage apparently reduces spasm and irritability *Acidophilus milk is beneficial* Vaccines and bacterial filtrates have been used with benefit and with failure Bargen[5] of the Mayo Clinic has reported the best results Others following his method have not, as yet, had such strikingly good results Since not only function but also susceptibility to infection may be favorably influenced by general measures, heliotherapy and the administration of cod liver oil in combination with hygienic management are indicated as an aid to any more specific therapy that may be available

When the colon becomes so extensively diseased that it not only loses its function but is a site of infection and septic absorption, the process is then irreversible, and removal is indicated in a two stage operation

Irrigation through the appendix is less satisfactory, and the benefits are not permanent

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[5] Bargen J R Transactions of Gastro Enterological Association 1927

SUMMARY

1 Spastic constipation often precedes and always is associated with the nonspecific form of colitis

2 The treatment of spastic constipation is therefore not only a prophylactic measure but also an important part of the management of colitis

3 The principles of treatment should be based on the constitutional character of the disturbance, and should be sedative rather than stimulative

1720 Connecticut Avenue

THE GRAHAM STEELL MURMUR

REPORT OF CASE *

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The rarity of the Graham Steell murmur and especially the rarity of its confirmation by postmortem examination, together with the confused ideas as to its occurrence and significance in the minds of most physicians, show the need of such a case report as that which follows

The Graham Steell murmur[1] is the early blowing diastolic murmur heard along the left border of the sternum due to functional regurgitation through the pulmonic valve The pulmonic valve itself is not diseased, its ring of attachment is stretched as a result of chronic pulmonary hypertension from marked mitral stenosis The pulmonic artery is dilated At postmortem examination the valve ring may not be widely dilated, the leak being largely the result of hydrodynamic effects during life

Generally, when the Graham Steell murmur has been diagnosed during life, aortic regurgitation has been found post mortem, explaining the supposed pulmonic regurgitant murmur Thus it is unwise to interpret such a murmur as the Graham Steell unless the evidence as in the case reported here, is quite complete Graham Steell[2] himself found only rare cases one case out of seventeen with mitral stenosis examined post mortem, and two other probable cases out of forty-three with mitral stenosis not examined post mortem The instance here presented is the first one in which I have made the diagnosis of the Graham Steell murmur without question ante mortem that has been confirmed at postmortem examination The murmur is rare, but it does exist

REPORT OF CASE

History—N C a white woman, aged 35 single employed as an office clerk, entered the hospital, March 17 1921 complaining of heart trouble dating back ten or twelve years with dyspnea on exertion since the onset For the three weeks prior to entry she had been acutely ill with palpitation smothering sensation, and orthopnea The present illness began after she had climbed stairs For the two weeks before admission she had been in bed Edema had accumulated a few days before admission

The past history revealed three attacks of rheumatic fever at the ages of 10 11 and 16 years, respectively She had also had tonsillitis, but the tonsils had not been removed She had not had chorea

Physical Examination—The patient was very ill and orthopneic with slight but definite cyanosis of the mucous membranes The pupils were equal and regular, and reacted to light and distance normally The teeth were poor, and there was much pyorrhea The tonsils were small The cervical veins were markedly engorged The thyroid gland was normal, and there was no exophthalmos The cervical glands were not enlarged The lungs were clear The apex impulse of the heart was felt in the fifth space, 11 cm to the left of the midsternal line and 3 cm beyond the midclavicular line There was increased dulness to percussion in the second and third interspaces to the left of the sternum The heart rate was absolutely irregular and very rapid, being counted by the intern on examination as 240 a minute (?) The pulmonic second sound was accentuated It was difficult to make out any murmurs at the time because of the tachycardia The blood pressure was 80 mm of mercury systolic and 60 diastolic so far as could be determined The pulses were small The arteries were soft The abdomen was distended and tympanitic, without masses or spasm There was tenderness in the right upper quadrant, and the liver edge, felt 10 cm below the costal border, was slightly tender The spleen and kidneys were not felt The extremities showed slight tremor of the hands Clubbing of the fingers, and petechiae were not seen There was well marked edema over the back and sacrum but not over the shins The knee jerks were present There was slight jaundice but no fever at entrance

The urine showed a large trace of albumin, but no sugar, the specific gravity was 1 023, and the sediment was loaded with hyaline and granular casts Renal function (red test) was 25 per cent in two hours The blood showed a leukocytosis of 28,800 with 91 per cent polymorphonuclears The stool was normal The Wassermann reaction was negative Cultures of the blood did not show any growth An electrocardiogram showed a coarse type of auricular fibrillation with very rapid ventricular rate

Treatment and Course—Under a regimen of rest in bed and full digitalization, begun with fluidextract of apocynum and continued with digitalis, the patient improved rapidly and markedly She remained in the ward for one month, showing at first slight fever (100 F) This slight temperature was probably associated with a mild attack of articular rheumatism, the left shoulder was painful for a few days The leukocytosis gradually declined to a normal white count The urine cleared, so that no albumin was found in it at the time of discharge The heart rate dropped to 70 under the effect of digitalis and there was very little pulse deficit At the time of admission there had been an extensive pulse deficit, the radial rate was given as about 70, while the apex rate was very high When the patient was discharged, April 22, 1921, the apex rate was 62 and the radial rate, 58 The edema had disappeared and the blood pressure was 110 systolic and 65 diastolic After the pulse rate slowed, it was possible to determine the condition of the valves A loud rolling diastolic murmur was found at the apex The heart rhythm continued absolutely irregular The patient was discharged and placed under the supervision of her local physician In August, 1921, there was another attack of congestive failure with much dropsy The patient stayed in bed at home under the care of her local physician until March 22, 1922 She improved very much and for two years did well but did not work

When she was seen in consultation, Jan 17, 1924, although she was still limited in activity by dyspnea, she felt fairly well, was getting restless, and wanted to work Besides the dyspnea, she had some irregular palpitation on exertion and occasional knifelike precordial pain radiating to the left shoulder on exertion and when tired She was easily fatigued Physical examination at this time showed a definite cyanotic flush over both cheek bones, marked enlargement of the heart, a loud first sound at the apex, a loud pulmonic second sound and blowing systolic and marked rumbling diastolic murmurs at the apex There was absolute arrhythmia, the pulse rate at the apex was 150 and at the wrist 110, with a deficit of 40 The lungs were clear The abdomen was normal, and the liver was not felt There was no edema over the extremities, and no clubbing of the fingers was found The electrocardiogram at that time showed auricular fibrillation diphasic T waves in lead II, and well marked right axis deviation She

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From the Massachusetts General Hospital

[1] Steell Graham The Murmur of High Pressure in the Pulmonary Artery Medical Chronicle 9 182 (Dec) 1888

[2] Steell Graham The Auscultatory Signs etc of Mitral Stenosis a Statistical Enquiry Medical Chronicle new series 3 409 (Sept) 1895

was advised to increase the dose of digitalis, which she had been taking in small doses, until the heart rate was reduced to normal.

Four weeks later the patient reported that she was feeling much better. The apex rate was 120 and was still absolutely irregular. She was working a little at sewing and embroidery.

Two months later, after again increasing the dose of digitalis, she felt better and the heart rate was reduced to 100.

In June, 1924, she reported that she was doing very well and was working.

In February, 1925, she was seen again but at this time she was not so well because of trouble during the winter from abscessed teeth and nervous shock (her landlord had committed suicide). The heart rate at that time was 90, and the pulse rate absolutely irregular. The apical systolic and diastolic murmurs were as before. There was no edema.

From February, 1925, to November, 1926, the patient lived a very limited life, sometimes being able to do a little work, but often laid up with orthopnea, edema and weakness. With rest in bed and digitalis the edema would subside, and after a few weeks in bed she would be able to return to quiet activity for a few weeks. Then the symptoms would return again.

Second Admission.—In October, 1926, the patient grew much worse. The edema and orthopnea did not subside, and she was obliged to reenter the hospital, November 10. She remained until April 12, 1927, with persistent edema of the legs and lower back, enlargement of the liver and ascites of varying degree. With constant attention and the use of digitalis, diuretics, sedatives and repeated abdominal paracentesis, she showed little change in the course of five months. She was very ill throughout this period.

Physical examination of the heart did not show any change over the previous observations except that in addition to the blowing systolic and rumbling diastolic murmurs at the apex there was constantly found now a new murmur, namely, a loud blowing early diastolic murmur, moderate in degree along the left border of the sternum but marked and maximal in the second left interspace. It was only faintly heard over the aortic area and along the left lower border of the sternum, and not heard at the apex. The pulmonic second sound was very loud. The apex rate during the patient's stay in the hospital varied between 130 and 55, with a pulse deficit ranging from 65 to 5 beats a minute. The blood pressure averaged about 150 systolic and 90 diastolic. There was occasional slight fever and also occasional cough with rales in the lungs. The pulse was never Corrigan in type. In addition to the early blowing diastolic murmur in the second left interspace, a systolic murmur with prominent pulsation and increased dulness to percussion was localized in that area. The urine showed constantly a large trace of albumin, but no sugar or bile; the specific gravity ranged from 1.010 to 1.025, and casts and cells were present in the sediment. There was a frequent but not constant leukocytosis. Several blood cultures failed to show any growth. There was no anemia. The Wassermann reaction was negative. The nonprotein nitrogen of the blood was normal. Renal function (red test) varied from 25 to 50 per cent. The electrocardiogram on two occasions showed auricular fibrillation with ventricular rates of 70 and 90, inverted T waves in lead II, and well marked right axis deviation as before. A roentgenogram of the heart showed marked enlargement in all diameters with evidence of congestion of the lungs. It was not thought from the roentgen ray study that pericardial effusion was present.

The patient was discharged April 12, to a convalescent home, where she died, April 18, with symptoms and signs suggesting extreme cardiac failure, shortly after two attacks of acute pain in the right thigh and right arm, respectively, and with hemorrhage from the bowel occurring a few hours before death.

Postmortem Examination.—On the basis of the conditions attending death a clinical diagnosis of mitral stenosis, with a Graham Steell murmur was made. The anatomic diagnosis was rheumatic heart disease with mitral stenosis, relative pulmonary insufficiency, and chronic passive congestion.

Postmortem examination by Dr. Tracy B. Mallory, April 18, 1927, eleven hours after death, showed the body poorly developed and nourished. The abdomen was extremely distended. Beneath the umbilicus was a circular puncture wound presumably from a trocar. There was almost no subcutaneous fat. The muscles were small and normal in color and consistency.

The peritoneal cavity contained more than 4 liters of clear straw colored fluid. After removal, the peritoneal surfaces appeared smooth and glistening. The appendix and the esophagus were normal. The mucosa of the stomach was deeply congested and much thickened, the congestion extending downward throughout the intestinal tract. The mesenteric and retroperitoneal glands were normal. The margin of the liver extended 2 cm. below the costal border in the midclavicular line, and 7 cm. below the ensiform cartilage. The diaphragm extended to the third interspace on the right, and to the fifth interspace on the left.

The right pleural cavity was entirely obliterated by old fibrous adhesions. The left cavity showed a few adhesions and a small amount of clear, straw colored fluid. The lungs showed a uniform increase in consistency, and on cross section exuded large quantities of frothy, blood-stained fluid.

The pericardium contained 150 cc. of clear straw colored fluid. The heart weighed 560 Gm., including the thoracic aorta and a large thrombus in the left auricle estimated to weigh 60 Gm. The valve measurements (circumference), after fixation in solution of formaldehyde were: aortic, 7 cm.; mitral, 2.5 cm.; pulmonic, 8.5 cm., and tricuspid, 10 cm. The right ventricular wall was 12 mm. thick, the left ventricular wall, 16 mm. The right auricular wall measured 3 mm., the left, 4 mm. The aortic valve showed a slight interadherence of the cusps but no suggestion of valvular insufficiency. The curtains of the mitral valve were extremely thick, dense and fibrous, with a trace of calcification. The surfaces showed a fine granular appearance in two spots but no fresh vegetations. The chordae tendineae were markedly shortened and thickened. The tricuspid valve was negative except for dilatation of the ring in the fresh specimen. There were no deformities of the cusps. The left ventricle was slightly dilated. The papillary muscles were definitely hypertrophied. The left auricle was greatly dilated and the walls were greatly thickened; about half the cavity was filled by a large adherent thrombus. The right ventricle was greatly dilated and hypertrophied. The columnae carneae were more than twice the normal size. The right auricle also showed dilatation of the cavity and marked hypertrophy of the walls.

There was slight sclerosis of the aorta. The pulmonary artery was definitely dilated, with slight sclerosis of the intima. The venae cavae were normal.

The liver was slightly enlarged with very prominent markings and slightly irregular surface. The gallbladder and the bile ducts were normal. The pancreas and its ducts also were normal.

The spleen was slightly enlarged and firm. There was a transverse linear scar 6 cm. in length. Toward the hilum was a sharply defined white wedge-shaped area measuring 2 by 4 by 1.5 cm.

The suprarenal glands were normal.

The kidneys were normal in size. The capsules stripped with slight difficulty, leaving finely granular surfaces. The pelves were negative. In the cortex of the right kidney was a white wedge-shaped area, with bright red borders, measuring 1.5 cm. in diameter.

The bladder, uterus, tubes and ovaries were normal.

Microscopic examination showed marked congestion of the lungs, with many pigment filled endothelial leukocytes. In the liver, there was extreme congestion of the centers of the lobules. The liver cords were narrowed and in many instances the liver cells had entirely disappeared.

Training of a Good Physician.—Without a scientific training it is impossible to become a good doctor, with a scientific training and reasonable endowments of character and intelligence every doctor may play a part in advancing the knowledge which is required for the alleviation and prevention of the sufferings of mankind.—Paton, D. N.: *Edinburgh M. J.* **35:** 10 (Jan.) 1928.

TREATMENT OF TABES DORSALIS BY EPIDURAL INJECTIONS OF NEOARSPHENAMINE

PRELIMINARY REPORT *

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CHICAGO

In my studies of the pathology of tabes dorsalis I frequently encountered inflammatory phenomena in the posterior epidural space of the spinal cord as well as in the dura itself The changes were always associated with inflammation and hyperplasia of the perineurium of the spinal roots, especially of the posterior roots, and spinal cord changes typical of tabes dorsalis Whether the tabetic cord changes are due to the epidural and other changes mentioned, that is to say, whether there is a causal relationship between the epidural and the spinal cord changes, I am not as yet prepared to say as my studies are not completed Here I wish merely to state that such a view of the pathogenesis explains the changes seen in tabes better than any so far offered, and that it also suggests a method of treatment that seems to be more rational and effective than any so far used

The method consists in injecting neoarsphenamine into the epidural space, which, as I hinted, is the probable primary seat of the spinal root and cord changes The doses are the same as those used for intravenous injection, though 0 3 Gm dissolved in 10 cc of double distilled water is sufficient The injections are given with a spinal puncture needle through the sacral hiatus into the sacral canal which is continuous with the spinal epidural space They are given twice a week for a period of four weeks or less, depending on the degree and rapidity of improvement Each epidural neoarsphenamine injection is preceded by the hypodermic injection of 2 cc of a 2 per cent solution of procaine hydrochloride In general, the method here used is the same as that introduced and elaborated by Cathelin, Lawen and others, extensively used in inducing so-called sacral anesthesia

So far, forty patients (thirty-five men and five women) have been treated by the epidural method The majority of the patients were treated at the Cook County Hospital, some (seven cases) at the Research and Educational Hospital of the University of Illinois All possible clinical types of tabes were represented—shooting pains, gastric crises, ataxia, optic atrophy, bladder disturbances, paresthesias and Charcot joints, the majority of the cases were quite advanced, though there had been repeated treatment with arsphenamine and by other methods The injections were given by myself and my associates (Drs Ettleson, Bohrod, Raymond, Soper, Snow, Hayden and Bengston), who carefully watched and noted the progress of the disease

The most striking improvement was in the gait, the Romberg phenomenon, the ataxia and the shooting pains No results were obtained in the Charcot joint type of tabes, while optic atrophies and crises gave results indefinite and inconstant However, the general conditions of sleep, appetite, color of skin, and psychic and physical states improved even in apparently hopeless cases The favorable effect was usually noticed after the first two injections, to which the patients, both men and women, have submitted willingly and which they generally bore well In view of the large amount of neoarsphenamine introduced into the loose, soft connective tissue which forms the main contents of the sacral canal, one is indeed surprised at the absence of distressing complications, such as are seen after accidental subcutaneous injections

Of 125 injections given only one proved disastrous This was in a man with the tabetic type of general paralysis who a few months previously had improved considerably after malaria treatment and had been able to resume work May 8, 1927, he consulted the resident of the neurologic service at the Research and Educational Hospital for 'rheumatism" in the lower extremities and "tabetic' gait The same day 0 3 Gm of neoarsphenamine dissolved in 10 cc of distilled water was injected epidurally, three days later, 0 5 Gm was given The day after the latter injection the patient complained of pain in the lower extremities and weakness in the feet, which in a few days was followed by paralysis and sensory bladder and trophic disturbances The clinical picture was that of myelomalacia, and within a week the motor and sensory disturbances extended upward to involve completely the right and partly the left upper extremity Death occurred one month after the first injection The necropsy, performed by Dr Jaffe a few hours after death, revealed, grossly, necrosis of the epidural tissues and an apparently normal spinal cord Microscopic studies showed that several bundles or roots of the lowermost portion of the cauda equina were also completely necrosed, the perineurium was hyperplastic the dura was normal the epidural tissues were enormously infiltrated, the sacral portion of the spinal cord showed liquefaction of the anterolateral tracts and absence of myelomalacia or other changes higher up The conclusion arrived at by Dr Jaffe and myself was that the neoarsphenamine solution had penetrated the dural sac, that is to say, the neoarsphenamine landed not in the epidural space but in the dural sac itself To avoid puncturing the dural sac and other complications, it might be advisable not to pass the needle farther than about 8 cm (3 inches), or, when this depth is passed, to keep it deviated from the median line, not to use force in injecting the solution, and to withdraw the needle in case the injection meets with resistance It is also advisable to keep the bevel of the needle turned skyward After the injection, the patient is kept in bed with the pelvis elevated, especially when injections are given for tabetic crises

In two other cases, a somewhat similar condition appeared imminent but fortunately it was confined to pain and urinary disturbances In one of these cases on June 3, 1927, 0 3 Gm of neoarsphenamine was given epidurally for the relief of severe shooting pains which deprived the patient of sleep Two days after the first injection, the shooting pains improved so much that the patient was able to sleep well throughout the night Two more injections brought still further improvement, but after the fourth the patient complained of paresthesia and weakness in the lower extremities, bladder retention and restlessness The condition improved slowly Evidently a lesion of the cauda equina had been caused in this case by the injection of 0 3 Gm of neoarsphenamine, although in the previous case the dose was much larger (0 5 Gm)

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* Read before the Chicago Neurological Society Nov 17 1927

* From the neurologic services of the Cook County Hospital and of the Research and Educational Hospitals of the University of Illinois

The dosage apparently has nothing to do with the complication, which probably was due to some anomalies of the sacral canal or to faulty technic

Except for these three unfortunate injections or, rather, one, I have given about 125 injections with absolutely no bad effects or complications The epidural method of neoarsphenamine treatment may therefore be considered harmless if proper precautions are taken

In my series there were three patients with gastric crises In one, a woman, the crisis disappeared for a period of three months after an epidural injection of 20 cc of 2 per cent solution of procaine hydrochloride followed by five epidural injections of neoarsphenamine In another patient, with juvenile tabes, the crisis did not yield to procaine hydrochloride (7 cc of a 2 per cent solution) or to epidural injections of neoarsphenamine However, this patient had only three epidural treatments, he had had, several months previously, intensive malaria treatment and generally reacted very poorly to any method In the third patient, a man, aged 39, who had had gastric crises for about six years and in whom a rhizotomy had been performed in 1924, the results were better but rather inconstant The operation gave him very slight relief Aside from the crises, the patient did not have any other complaints, such as ataxia, sphincter disturbances and shooting pains March 23, 1927, he received epidurally 0 3 Gm of neoarsphenamine dissolved in 20 cc of distilled water, five more injections were given within the next thirty-four days Twice during the interval (March 31 and April 6) he received epidural injections of 10 cc of 2 per cent procaine hydrochloride for the gastric crises The latter disappeared after the sixth epidural injection of neoarsphenamine May 15 1927, 0 3 Gm of neoarsphenamine was given intravenously This was followed one hour later by a fresh attack of gastric crises, which lasted until May 17, 1927 After two more epidural injections the patient was discharged, as it was found that he had been a morphine addict and did not cooperate

The results of the treatment of tabetic crises might be considered inconstant and not as uniform and certain as those obtained in the treatment of shooting pains, ataxia and the other conditions mentioned Here the results were decidedly good

REPORT OF CASES

Case 1 —A man aged 44, admitted, March 28 1927 complained of difficulty in walking and shooting pains in the legs for two years, poor vision for one year, and slight urinary incontinence

Examination revealed a positive Romberg sign, markedly ataxic gait Argyll Robertson pupils, hypotonia poor coordination, absent tendon reflexes, impairment of the position sense, gray optic disks, and a positive Wassermann reaction of both the blood and spinal fluid (four plus)

April 8 an epidural injection of 0 3 Gm of neoarsphenamine was given and was repeated April 8, 13, 18, 22 and 26 The patient now walks unaided, pain has disappeared, the incontinence is less troublesome, the general condition is excellent, and the blood Wassermann reaction, May 9, was two plus

Case 2 —A man, aged 65, admitted April 24, 1927, complained of shooting pains for four and one-half months, inability to walk at all for two months, urinary incontinence for six months and a girdle sensation A chancre had occurred nine years before

Examination revealed Argyll Robertson pupils absent knee jerks, a loss of deep sensibility, a markedly positive Romberg sign poor coordination, four plus Wassermann reaction in both spinal fluid and blood, and hypotonia

The first injection, May 4, 1927 (0 3 Gm in 10 cc) was followed by injections on May 9, 11, 19 and 24 and on June 2 After the third injection, May 11, the patient was able to walk for the first time in two months, and a few days after the last injection, June 2, 1927, was able to walk unaided The gait was only slightly ataxic, the incontinence and lightning pains disappeared, and the girdle sensation diminished The Wassermann reaction remained unchanged In this case an intravenous injection, May 14, 1927, was followed by a chill and shooting pain

Case 3 —A man, aged 39, admitted April 28, 1927, complained of difficulty in walking for one year and inability to walk without two canes for about one month He also had urinary incontinence, especially at night

Examination revealed frozen pupils, lost tendon reflexes positive Romberg sign, hypotonia, and a four plus Wassermann reaction in the blood and spinal fluid

Epidural injections of 0 3 Gm of neoarsphenamine were given on May 4, 9, 15, 19, 29 and 31 The incontinence disappeared, and the patient became able to walk unaided though the gait is still ataxic

These are only a few of the cases treated within a comparatively short period of a few months It is not possible, therefore, to state how long the improvement will last or what will be the further course of the disease in general, or its effect on the serologic condition The fact that a marked improvement is possible and obtainable in a short time makes this method of treatment of tabes worth using I am not able to state whether this method should be combined with intravenous injections of arsenical preparations or with mercurial therapy So far, I am using this method combined with mercurial therapy (inunctions)

It should be pointed out that the idea of epidural medication in tabes is by no means new Strauss,[1] in 1903, used epidural injections of mercuric chloride, but they were soon discontinued because of the severe reactive phenomena that followed In 1912, Lawen[2] gave epidural injections of procaine hydrochloride for relief of tabetic crises In one case, 50 cc of 1 per cent procaine hydrochloride solution stopped the pains but for a short time only Nor did the epidural injections give results in a number of other cases In one case the crises yielded to repeated injections of procaine hydrochloride (0 4 Gm was given in one-half hour, in 70 cc of sodium chloride solution), but the patient became almost pulseless and unconscious, and was revived with great difficulty The pain returned one hour later Lawen states that epidural injections of procaine hydrochloride in tabetic crises are contraindicated In 1919, Moos and Warstat[3] used epidural injections of arsphenamine in six cases of tabes, in one of which the diagnosis was questionable Thirty-four epidural injections were given, twice a week, and each injection contained 300 cc of 0 05 per cent solution, that is to say, 0 15 Gm of arsphenamine was given In five cases, the spinal fluid was favorably influenced They concluded that the epidural route for arsphenamine injection is less dangerous than other intraspinal methods, and that in animals they could demonstrate penetration of the spinal fluid from the subdural into the subarachnoid space

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[1] Strauss A Meine Resultate der epiduralen Einspritzungen durch Punction des Sacralkanals bei Syphilis und den funktionellen Erkrankungen der Harn und Geschlechtsorgane Munchen med Wchnschr **50** 1206 (July 14) 1903

[2] Lawen A *Ueber die Verbindung der Lokalanasthesie mit der* Narkose ueber hohe Extraduralanasthesie und epidurale Injectionen anasthesierander Loesungen bie tabischen Magenkrisen Beitr z klin Chir **80** 168 1912

[3] Moos and Warstat Die Behandlung der Syphilis des Zentralnervensystems mit epiduralen Salvarsan injectionen Dermat. Ztschr **28** 291 1919

Schonfeld,[4] in 1926, used arsphenamine epidurally in six and a silver arsphenamine in seven cases Altogether he gave nineteen injections, for the purpose of determining whether arsenic thus introduced can reach the subarachnoid space and be demonstrated in the cerebrospinal fluid As in all his cases the results were negative, he came to the conclusion that the epidural method of treatment of tabes cannot replace other "intralumbar" methods

From these few references one may gather that the ideas advocated differ greatly from those expressed in the present contribution Thus, my purpose in giving the epidural injections is not to determine the presence or absence of arsenic in the spinal fluid but to influence the epidural conditions which are most likely responsible for the tabetic changes, *the drug injected is neoarsphenamine*, in doses as large as those used for intravenous injections and considerably larger than those used in any of the so-called intraspinal methods (Swift-Ellis, Gennerich, Schubert and others) discusssed elsewhere [5]

For the anatomophysiologic facts pertaining to epidural injections, such as the highest level the fluids injected may reach, the contributions by Lawen [6] and Heile,[7] and especially Cathelin [8] should be consulted

31 North State Street

THE STATUS OF GALLBLADDER SURGERY

BASED ON A STUDY OF FOURTEEN THOUSAND SPECIMENS

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SAN FRANCISCO

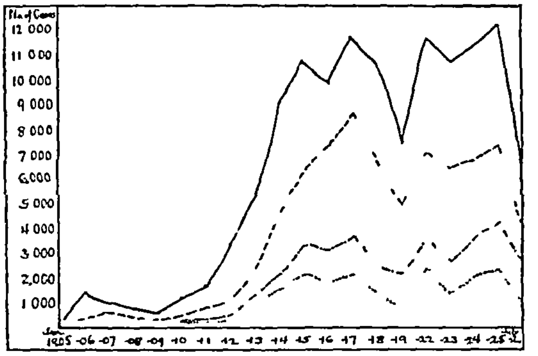
There is probably no better way of determining the present status of gallbladder surgery than that afforded by studies of large series of operatively removed specimens This study of more than 14,000 gallbladders has an unusual value in that it embraces the experience of essentially the same surgeons during a period of twenty years Necropsy specimens from 1,647 cases are included for comparative studies

During the last thirty years, the surgical treatment of gallbladder disease has varied greatly Cholecystostomy formerly comprised more than half of the gallbladder operations, today it comprises less than 5 per cent in most of the clinics in America Cholecystectomy has become the almost routine procedure, yet it is interesting that the indications for cholecystectomy have not changed much during this period This fact is evident in the literature and is substantiated in this study of 12,499 operatively removed gallbladders

While preparing the Mayo Clinic gallbladder exhibit for the annual session of the American Medical Association in 1924,[1] I was impressed by the constant proportions of the various gallbladder diseases which required cholecystectomy It had seemed to me that the indications for cholecystectomy had varied during even a five year period If the types of disease were the criteria for gallbladder excision, then certainly I had been in error, for the percentages of excision for acute, subacute and chronic cholecystitis, cholesterosis cholelithiasis and carcinoma had remained almost the same over the twenty year period studied, as shown in the accompanying chart It is evident from this chart that the various gallbladder diseases requiring cholecystectomy remained proportionately the same during this period

The number of cases in which cholecystostomy was performed varied markedly In 1906, 55 7 per cent of the gallbladder operations at the Mayo Clinic were cholecystostomies, in 1926, only 4 3 per cent Obviously, cholecystostomy had not been a satisfactory procedure Failure occurred because the focus of infection had not been removed and therefore infection continued to spread to adjacent organs by way of the lymphatics stones often reformed because the requisites for stone formation had not been eliminated As soon as the pathology of the gallbladder was better understood, surgeons changed their operative methods and cholecystostomy was less frequently performed

As it seems impossible with our present facilities to determine accurately the type of pathologic change in the gallbladder before operation, it seems especially significant that the proportions of the various gallbladder diseases requiring cholecystectomy have remained almost constant Clinicians accurately identify a diseased gallbladder in about 85 per cent of the cases but are unable to establish the type of pathologic change with much success In our recent study of 1,000 cases of cholesterosis of the gallbladder, stones were diagnosed in 24 per cent of the stone-free cases and overlooked in 45 per cent of those with stone Even the roentgenologist has difficulty in diagnosing the simplest gallbladder problem, for in our series of cases of cholesterosis, he overlooked stones in 40 per cent of the cases in which they were present and diagnosed them with the Graham-Cole technic in 9 per cent when they were absent at operation With plain plate roentgenography the error is still greater, for only about 20 per cent of gallstones cast a shadow



Cholecystectomies at the Mayo Clinic from January 1906 to July 1926 and dashes cholesterosis with stones dotted line cholesterosis without solid line total number of cases broken line cholelithiasis line of dots stones

The surgeon, however, is not especially interested in the refinements of pathologic diagnosis He is called on to determine when a diseased gallbladder should be subjected to operative therapy The decision is often difficult, and in the majority of cases surgery will be optional At the Mayo Clinic, surgery is rarely urged on the patient The situation is explained to him, and he is allowed to decide whether his symptoms are severe enough to warrant operative aid or not Under these circumstances, the accompanying chart is particularly significant, for if patients elect surgery on the basis of the severity of their symptoms, then the value of the parallelism in the graphs is increased

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[4] Schonfeld W Der epidurale Raum in seinen Beziehungen zum Liquor Ztschr f d ges Neurol u Psychiat **104** 280 1926

[5] Hassin G B The Intraspinal Arsenic Treatment of Syphilis J A M A **65** 2078 (Dec. 11) 1915

[6] Lawen A Die Extradural Anaesthesie Ergebn d Chir u Orthop 5 39 1913

[7] Heile B Der epidurale Raum Arch f klin Chir **101** 845 1913

[8] Cathelin F Les injections epidurales par ponction du canal sacre These de Paris 1902

[1] Mr *Judah and Dr Mentzer won the gold medal for this exhibit* at the Chicago session in 1924 and honorable mention at Atlantic City in 1925

It is common experience to find minor grades of disease producing more severe symptoms than major pathologic changes This is especially true in diseases of the gallbladder, patients often carrying large stones for years without much distress, whereas others require morphine for the relief of pain due to a mild cholecystitis without stones Obviously, it is not the degree of pathologic change that produces symptoms or warrants surgical aid Since this is true, the data contained in the chart seem even more significant

For this study I examined 12,499 surgical specimens and compared them with 1,647 consecutive gallbladders seen at necropsy There were 573 cases of subacute cholecystitis in the surgical group, 167 of acute pericholecystitis, 335 of acute purulent cholecystitis and 11,424 of chronic cholecystitis, as summarized in the accompanying table There were fifty-two cases of primary carcinoma of the gallbladder, but only a few of these specimens are included in this study Twenty-two specimens which the pathologist called "normal" had been removed Many gallbladders are removed which, to eyes other than the pathologist's, appear normal, and yet many of these patients are completely relieved of their distress They are not neurasthenics for this element in their history has been carefully excluded The problem in these cases is unsolved We do not know the mechanism of pain in these instances, nor do we know why these patients are relieved of their distress, after cholecystectomy Excision of the normal appearing gallbladder is justifiable, however, only when pain has been a dominating feature in the patient's gallbladder distress

Pathologic Changes in Cholecystectomy Specimens

Pathologic Condition	With Stones		Without Stones	
	Number	Percentage	Number	Percentage
Acute cholecystitis	270	2 1	64	0 51
Subacute cholecystitis	451	3 6	112	0 9
Pericholecystitis	98	0 7	65	0 52
Chronic cholecystitis	5 016	40 1	3 294	26 3
Cholesterosis (diffuse)	1 158	9 2	773	6 1
Cholesterosis (localized)	570	4 5	241	1 1
Empyema	270	2 1	61	0 51
Carcinoma	47	0 37	5	0 04
Total cases		12 499		

SURGICAL PROCEDURES

Acute Cholecystitis—The acute condition of the gallbladder in early cholecystitis is subject to two very different surgical procedures It was formerly considered advisable to operate on the acutely diseased gallbladder as an emergency measure The mortality was high For this reason there has been a recent tendency toward conservatism Less than 1 per cent of the surgical specimens in our series showed acute cholecystitis

An acute cholecystitis is a potential catastrophe, for it is impossible to know how general or localized the infection may be If the infection is definitely localized in the gallbladder wall without involving the adjacent lymphatics, liver or pancreas, immediate cholecystectomy is advisable Unfortunately, such localization is rarely found Acute cholecystitis, when it can be recognized as such, invariably involves adjacent structures The manipulation necessary in operative removal spreads the inflammatory process further Results justify conservative treatment Bed rest with ice packs over the gallbladder area often aids in the localization and subsidence of the inflammatory lesion If the fever, pain, local rigidity and leukocyte count do not decrease after a few hours, surgical intervention is necessary

Acute Empyema—An acute empyema of the gallbladder is likewise often a trying condition, for delay may mean rupture with its attendant high mortality The procedure must necessarily be governed by the case itself It is sometimes possible to permit an acute empyema to subside, so that surgery may be more safely undertaken a few hours or even days later The differential diagnosis is most important, however, for confusion of this lesion with gangrene or torsion of the gallbladder is most serious

As a general rule, conservative measures are indicated in acute gallbladder lesions, provided the patient is under constant observation When radical treatment is necessary, it should be as conservative as possible Cholecystostomy is the operation of choice, as it permits the least operative manipulation and yields certain external drainage

Acute gallstone colic is not, of course, a surgical condition Unfortunately, it is not always recognized Many such patients are sent to the hospital for a hasty cholecystostomy Likewise, I have seen a gangrenous gallbladder and an acute empyema of the gallbladder treated as stone colic Procrastination and the administration of narcotics may be fatal in such cases Diagnostic errors of this sort can scarcely be made if careful clinical examinations and laboratory data are available

Cholesterosis—This is one of the most interesting of the gallbladder diseases Its diagnosis is as baffling to the clinician as its treatment is to the surgeon In some patients it is the sole lesion causing severe upper abdominal distress, and in others it remains for years without causing any disturbance

It is a relatively common disease, being present in 37 per cent of the gallbladders seen at necropsy and in 22 per cent of the surgical specimens Stones accompanied the lesion in less than half of the surgical cases and in about a third of the gallbladders examined post mortem, as shown in the table

Cholecystectomy had been performed in all the 2,742 cases of cholesterosis Cholecystostomy has been tried in this disease without satisfactory results, for the patients have rarely been relieved of their distress W J Mayo has reoperated in several of his own cases, and in no instance did he note a disappearance of the grossly visible lipoid in the gallbladder mucosa even after prolonged surgical drainage

Surgery is not indicated in all cases of cholesterosis of the gallbladder In some instances, at least, an early cholesterosis has remained for years without progression in the gross picture of the disease The Graham-Cole roentgenograms have proved that the gallbladder mucosa is capable of concentrating the dye "normally" in mild and occasionally even in advanced stages of this disease Obviously, then, this lesion is not, per se, an indication for operative therapy Judd has shown that only those patients presenting the classic syndrome of gallbladder disease with pain as a dominant symptom are satisfactorily relieved by surgery

In this disease the gallbladder is apparently only an indicator of a generalized metabolic fat disturbance in the body Lipoids accumulate in the gallbladder wall either as a result of local disturbance or because of the increased cholesterol content of the body generally

Henderson has shown a suggestive increase in the cholesterol content of the suprarenals also in this disease, and many workers have found increased lipoids in the blood serum I have compared the blood cholesterol content of more than 200 patients with cholesterosis of the gallbladder and have found an appreciable increase over the "normal" in almost every case Numerous samples of blood must be taken from the patient over a long period of time, single samples are of no value and may be misleading Obviously, the removal of the gallbladder could not cure the patient of his fundamental ill Yet patients in whom cholesterosis is found at operation are often completely relieved of their distress by cholecystectomy This is especially true if pain has been a prominent feature in their disturbance During the twenty year period covered by this report there has not been any proportional increase or decrease in the number of cholesterin-laden gallbladders excised at the Mayo Clinic This fact is pertinent when it is remembered that cholesterosis of the gallbladder is scarcely ever diagnosed before operation

Gallstones are not a significant accompaniment of this disease, as Judd and I have shown The clinical picture is not essentially modified by their presence This fact was established in our previous papers, and the present study affirms that observation After the gallbladder had been excised, stones were found in only about 60 per cent of the specimens Furthermore, there has not been any increase in the proportion of cases showing calculi in this disease If surgeons had noted that cholecystectomy gave better results in cases of cholesterosis with stones than in those without stones there would have been some proportional increase in the cases of cholesterosis with stone, particularly since this study embraces the experience of essentially the same surgeons over the same period of time

Of 1,647 consecutive patients examined at necropsy, 37 per cent had cholesterosis of the gallbladder Gallstones accompanied the lesion in 20 per cent of the cases Gallbladder disease was not anticipated in most of these patients, for in 87 per cent of them the history of gastro-intestinal disease had been negative Thereby it would seem that cholesterosis of the gallbladder may be an insignificant disease in many cases affecting a large percentage of the adult population unbeknown to them On the other hand, it is known that this seemingly simple lesion apparently causes severe pain and much gastro-intestinal distress in many patients, and that cholecystectomy completely relieves the trouble The significant features in this study, it seems to me, are that surgeons recognize this lesion at the operating table but are unable to anticipate it before surgery is undertaken, and that cholecystectomy gives complete relief in selected cases Therefore "surgical gallbladder cases" receive the benefit of operative therapy, the proportion of cholesterol-laden gallbladders found in this group has not varied during the twenty years covered by this study

Chronic Cholecystitis—In chronic abdominal disease the gallbladder, unfortunately, is often the surgical target I am afraid that the slightly diseased gallbladder is too frequently tampered with The surgeon is often satisfied with minor grades of inflammatory change in the specimen The pathologist can invariably find enough evidence to justify a diagnosis of "chronic cholecystitis" The justification lies not in the degree of inflammatory change found in the specimen after removal but rather in the degree of distress suffered by the patient before surgery It is true that cholecystectomy sometimes gives relief in the lesser inflammatory lesions of the gallbladder, but these relatively few cases do not justify the removal of all 'chronically infected gallbladders" It must not be forgotten that from the pathologist's point of view the majority of adults have a "chronically infected gallbladder"

The indications for cholecystectomy in chronic cholecystitis are variable The textbook picture of the disease is fairly definite, and when all the symptoms are present surgical aid is warranted When only a portion of the picture is present, and this is usually the case, the procedure is more uncertain I believe that every patient in whom a diagnosis of chronic cholecystitis can be made should be given the benefit of medical therapy, if relief is not obtained, then surgery may properly be considered

Cholelithiasis—Gallstones are not, per se, an indication for surgery It is surprising what a large percentage of the adult population carry gallstones throughout life without suffering much distress In a recent necropsy study at the Mayo Clinic, I found that 21 per cent of 612 consecutive patients had gallstones, less than half of these had been operated on at some time or other for gallbladder disease Obviously, the presence of stones is not, in itself, justification for surgical intervention Clinical symptoms and not pathologic changes must be the basis for surgical aid It is true that the gallbladder containing stones probably becomes secondarily infected sooner or later if the stones are not primarily of infectious origin The gallbladder thereby becomes a focus from which infection may spread to neighboring structures, notably the liver As such, it may be removed However, I believe that an inflammatory gallbladder that is spreading its infection to adjacent organs will present clinical evidence of that dispersement by an exacerbation of the symptoms It is known that a noninflammatory gallbladder, though filled with stones, may remain for years without producing appreciable symptoms Moreover, many cases of "silent stones" have occurred in chronic cholecystitis in which the infection lies quiescent and the gallbladder wall is bacteriologically negative on culture It is not the presence of stones or even of low grades of infection that persuade the surgeon to operate, but rather the symptoms produced by these pathologic changes In many cases these changes may be present without producing any symptoms These patients may pass through the span of their life without suffering sufficiently from their stones or from cholecystitis to warrant operative removal I believe that most of these patients escape appreciable injury to other organs They may have a few more lymphocytes or even polymorphonuclear leukocytes in the liver than the "normal," but I do not believe that these minor changes warrant cholecystectomy Cholecystectomy may prevent progressive hepatic disease but I am sure that if the inflammatory progression is marked, clinical symptoms will appear demanding surgical intervention

The cholesterin-rich stones, in particular, lie dormant for years without giving much evidence of their presence These stones are probably solely of metabolic origin They are usually related to a pregnancy, to obesity or to some other generalized metabolic fat disturbance in the body As secondary infections set in, bile pigments are deposited in these stones, darkening them and producing the familiar pigmented "common stone" It is at this time that the stones are especially apt to produce symptoms In reality, I believe that the inflammatory changes in the gallbladder wall produce the symptoms If this is so, it seems to me that patients should be allowed to carry their stones until definite symptoms arise Cholecystectomy may be considered then for the relief of distress or for the removal of the infectious focus

One small stone frequently causes more distress than multiple stones, even when the latter occur in a gallbladder filled with old pus and detritus The gallbladder in the latter instance is insensitive because of advanced fibrosis and the destruction of the delicate mucosa and rugae

When surgery is indicated, cholecystectomy is the operation of choice Cholecystostomy is advisable in debilitated patients, occasionally, and when cholecystectomy is especially difficult Cholecystostomy should be considered in cholelithiasis when the common duct has been injured by cholangeitis or the passage of stones Strictures of the common duct are not easily treated, for plastic operations on the duct are not highly successful even in the best hands Therefore it is advisable to save the gallbladder for possible later anastomosis to the stomach or duodenum, as this may be the only means of bridging an obliteration produced by stenosis of the common duct

The gallbladder, though filled with stones, should be saved, if possible, in cases of advanced cirrhosis of the liver, for it may be needed for adequate drainage of bile The stones may be removed, and a large-mouthed cholecystoduodenostomy made Pancreatitis and carcinoma of the pancreas likewise warrant the preservation of the gallbladder because of common duct obstruction

Intrahepatic cholelithiasis also indicates the preservation of the gallbladder whenever possible, for in this condition stones pass down the hepatic and common ducts repeatedly They frequently injure the ducts and sometimes lodge to produce obstruction Operative removal of the stones is often necessary, and occasionally the ducts are so badly injured by repeated trauma that plastic repairs are no longer possible The gallbladder may be used in some cases to bridge the common duct by suturing it to the duodenum The risk in this operation is less than that following the operation of last resort, namely, anastomosis of the duodenum to the under surface of the liver

SUMMARY

1 In this study, 12,499 surgical and 1,647 necropsy gallbladders were examined

2 Three per cent of the surgical specimens showed acute cholecystitis, 1 3 per cent pericholecystitis, 4 5 per cent subacute cholecystitis, and 91 4 per cent chronic cholecystitis

3 Gallstones were present in 57 per cent of the surgical cases and in 20 per cent of the necropsy specimens

4 Cholesterosis occurred in 22 per cent of the surgical and in 37 per cent of the necropsy specimens, half of the former and about a third of the latter also contained stones

5 Acute empyema of the gallbladder was present in 2 6 per cent of the surgical cases

6 During the twenty year period covered by this study, the yearly incidence of these lesions in surgical specimens remained essentially the same

7 At the Mayo Clinic, cholecystostomy comprised 55 7 per cent of the gallbladder operations in 1906, and only 4 3 per cent in 1926

CONCLUSIONS

1 Gallbladder surgery is fairly well stabilized at present

2 Cholecystectomy comprises about 90 per cent of the gallbladder operations today

3 Surgery in gallbladder disease should be based on the clinical symptoms rather than the local pathologic changes

4 There are definite indications for saving the gallbladder whenever possible, especially in obstructions of the common duct and certain liver and pancreatic diseases

516 Sutter Street

Clinical Notes, Suggestions and New Instruments

A CASE OF INSULIN EDEMA

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Although I am certain that edema develops frequently in diabetic patients treated with insulin, very few cases have been reported in the literature I therefore am reporting the following case

I F , a man, aged 41, a mechanical dentist, seen by me on the afternoon of June 15, 1927, complained of dryness of the mouth and throat, thirst, polyuria, loss of weight, marked weakness and chilliness, all of only one week's duration The previous medical and surgical history was negative There was no history of venereal diseases

On physical examination it was observed that the patient was emaciated and pale, well oriented, and not dyspneic There was a marked odor of acetone to the breath The head and scalp were normal The pupils were equal and regular and reacted to light and in accommodation, ocular movements were normal The nose was normal Pyorrhea was marked, there were many decayed teeth The tongue was very dry The throat was dry but otherwise normal The neck was normal The lungs, heart and abdomen were normal There was no edema of the extremities The knee jerks were normal The skin, glands and genitalia were normal The weight was 125 pounds (56 7 Kg) The blood pressure was 130 systolic and 90 diastolic The rectal temperature was 98 2 F , the pulse, 74 The urine was colorless, clear and acid, and the specific gravity was 1 030 There was no albumin Dextrose was four plus There were large amounts of acetone, diacetic acid and beta-oxybutyric acids present microscopic examination was negative The chemical examination of the blood showed 422 mg of sugar, 14 5 mg of urea and 1 5 mg of creatinine to each hundred cubic centimeters of blood

The patient was ordered to bed and was given hot black coffee, tea and orange juice several times during the first day Saline enemas were administered, and hot water bags were applied to the feet and body Twenty-five units of insulin was given the first day The next day, June 16, the patient already felt much better, and was given 30 units of insulin June 17, 18, 19 and 20, he received 30 units of insulin daily but continued to have four plus dextrose in the urine and high blood dextrose, although he felt much better His weight had already climbed to 141 pounds (64 Kg) He was receiving a diet containing 750 calories at this time No edema was visible The carbohydrate in the diet was increased in greater proportion than was the protein or fat June 21, 22 and 23, the patient received 50 units of insulin daily, on the 22d, pitting edema of the legs was first observed The patient felt so well now that he insisted on going back to work but was not permitted to do so The urine for the first time on the 24th contained no acetone, diacetic or beta oxybutyric acids and only a trace of dextrose On the 25th, his weight was 151 pounds (68 5 Kg) and there was definite edema of the lower extremities The fluid intake was very slightly reduced but the salt intake was markedly reduced Within ten days his weight came down to 139 pounds (63 Kg) although his diet was gradually increased, and 40 units of insulin was being given daily He has remained sugar free, feeling well and weighing between 137 and 140 pounds (62 and 63 5 Kg) The edema is gone

The patient gained 26 pounds (12 Kg) in ten days, all as the result of the retention of water, and lost 12 pounds (5 4 Kg) with disappearance of the edema in the same length of time with practically the same insulin dosage but reduction in the salt intake The exact nature of this phenomenon is not clear Some observers believe that salt restriction fails to relieve the edema in these cases, but von Noorden and Isaac* maintain that salt restriction will help to reduce this type of edema The edema is not due to impaired renal capacity In this case no albumin was found in the urine, and the renal function so far as nitrogenous excretion is concerned was normal Some believe that insulin edema is a colloidal phenomenon, that insulin increases the hydration capacity of the tissue colloids of the body Two and five-tenths grams of water can be retained by each gram of glycogen stored both in the muscles and in the liver The more severe the case of diabetes, the more apt is the edema to appear Great retention of fluid may result from the sudden reduction of the larger quantities of sugar in the blood

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TRICHINOSIS WITH INVOLVEMENT OF THE CENTRAL NERVOUS SYSTEM

Joseph Salan M D and Benjamin Schwartz M D New York

A case of trichinosis with involvement of the central nervous system is reported here as another clinical contribution to the literature of trichinosis encephalitis That this form of encephalitis exists as a clinical entity was demonstrated by Frothingham[1] in 1906 and by Hassin in a pathologic report in 1926 The older writers[3] speak of rigidity of the neck, Kernig s sign the paraplegias, singultus and trismus as occurring in trichinosis These signs, however, can be explained by local irritation in the muscles due to the presence of the trichinae, and not as necessarily due to involvement of the meninges or central nervous system

In reviewing the literature on trichinosis, if the review is limited to the cases presenting neurologic manifestations, one finds that very little has been written on the subject Even the discovery of the trichinae in the spinal fluid by Lintz and VanCott[4] in 1913, in the absence of accompanying neurologic symptoms, did not help to enrich the literature of cases of trichinosis in which the central nervous system was affected

Jacob Meyer[5] reports three cases of trichinosis in one family which simulated epidemic meningitis and in which the spinal fluid showed a pleocytosis of from 40 to 240 cells

In Sterling s[6] report of two cases of trichinosis in which he observed evidence of involvement of the central nervous system, he argues that the trichinae may and do involve the central nervous system in the manner of other familiar parasites In the first case, in a woman aged 21, fourteen days after the onset of the disease, there developed a hemiplegia, disturbances of the tactile, pain and deep muscle sense on the right side, and a motor aphasia In the second case, in a physician, aged 56 the disease was accompanied by unconsciousness and loss of bladder and rectal control Twelve days later consciousness returned, but a marked paresis of the left lower extremity and a mild paresis of the left upper extremity were observed Nine years afterward the patient still presented evidence of paresis on the left side Sterling concludes that the trichinae cause inflammation of blood vessels, thrombosis, or a meningo-encephalitis by invading the central nervous system

The report of our case can be added to those already quoted in an effort to clear up a very important problem namely, that of the mode of entrance of the trichinae into the brain and spinal cord It was originally thought that the trichinae travel into the various tissues and especially into the muscles by active migration Askanazy maintains that this migration is not an active but a passive process He shows that trichinae are born not in the lumen of the intestines but in their mucous membranes where the females deposit their eggs Thence the embryos pass into the lymphatics and are carried through the thoracic duct to the heart, blood vessels and capillaries of the muscles They break through these capillaries and land in the muscle fibers where they become encapsulated In our case trichinae were found in the blood (Dr W C Thro) spinal fluid and muscles which lead us to think that they travel into the various tissues by way of the blood and lymph channels

REPORT OF CASE

A H, a girl, aged 16 years, born in this country was admitted to St Mark's Hospital, Sept 16, 1927 because of inability to extend the elbows, pain in the lower extremities pain in the back, and edema of the face The family and past histories were entirely negative

Six days before admission to the hospital the patient noticed that her face was somewhat swollen and that she had a mild frontal headache She went in bathing and developed severe abdominal pains, chiefly in the region of the appendix On the following day she felt very tired complained of pain in both lower extremities and had a temperature of 102 6 F The day before her admission to the hospital she was unable to extend the forearms and the pain in the legs was so severe as to prevent her from walking At no time was there any vomiting Questioning of the patient in the hospital elicited the information that she had eaten raw pork

The patient was well developed and appeared acutely ill Her head was held stiffly, the upper extremities were in flexion, and there was an eversion of the left lower extremity The pupils were equal and reacted well to light and in accommodation The optic disks were congested and the margins blurred, the right more than the left There was a weakness of the left external rectus muscle, and a right facial weakness central in type All other cranial nerves were normal The patient also showed rigidity of the neck muscles and trismus The heart and lungs were normal The abdominal reflexes could not be obtained, and all the deep reflexes were exaggerated There was a bilateral Babinski sign with confirmatory reflexes, which were more marked in the right leg

The highest temperature was 102 F, which dropped to normal within three weeks The respiration ranged between 20 and 30 a minute, the pulse rate, between 80 and 110 The blood picture on admission showed a mild anemia a slight leukocytosis and a marked eosinophilia all of which returned to normal within three weeks The spinal fluid was under great pressure, and on analysis showed an absence of cells a faint trace of globulin and a slight increase in sugar The Wassermann reaction of the spinal fluid was negative, and numerous trichinae larvae were found Examination of the blood and of a section of the deltoid muscle also showed the presence of trichina larvae

Twenty-three days after admission the trichina larvae disappeared from the spinal fluid

At the time of her discharge from the hospital, three weeks later, the patient had recovered completely both objectively and subjectively, except for slight pains in both the upper and the lower extremities

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* Von Noorden and Isaac Die Zuckerkrankheit ed 8 Berlin Julius Springer, 1927 p 535

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Council on Physical Therapy

The following article has been approved by the Council on Physical Therapy of the American Medical Association
H J Holmquest Secretary

ROENTGEN-RAY DIAGNOSIS

LEOPOLD JACHES, M D
NEW YORK

(Concluded from page 545)

GASTRO-INTESTINAL TRACT

Following the example set by the American physiologist Cannon, the Munich physician Rieder added a bismuth salt to some pap or gruel and fed the patients this opaque mixture in order to visualize by filling the otherwise transparent stomach and intestines Eliminating the various bismuth combinations because of their toxicity roentgenologists now use the chemically pure barium sulphate, the emphasis being on the "chemically pure" Failure to take this precaution by the careless or inexperienced has resulted in the death of several patients

The esophagus, stomach and small intestines are best studied by the barium meal, the opaque substance being administered in one of several vehicles, such as plain water, in which it does not dissolve, in buttermilk, zoolak, malted milk, one of the various cereals, or potato starch Inventive persons have produced biscuits, gelatins and all sorts of concoctions, either to make the barium more palatable or to relieve the roentgenologist and his assistants from the drudgery of preparing the meal Suffice it to say that the vast majority of roentgenologists do not take kindly to any of these

The colon is best studied by the barium enema but may also be examined by the meal The latter is contraindicated when there is evidence indicative, or suggestive, of even partial obstruction The barium may harden like brick and may block a small passage The enema is contraindicated when there is marked bleeding from the bowel, the possibility of perforation, and shortly after operations on the intestine, especially when there have been resections or anastomosis A suture may give even when no force is used to administer the enema, and peritonitis may result

Esophagus—In the esophagus practically all lesions, except shallow ulceration of early carcinoma, can be discovered by the roentgen ray Carcinoma, which may occur in any portion of the esophagus, is most frequent at the cardia or lower third, less so near the aortic arch It is generally recognized by the irregular outline of the constriction and the rather insignificant dilatation above it

Cardiospasm, on the other hand, has a smooth appearance, and the esophagus is enormously dilated, sometimes casting a shadow in the chest even without barium and simulating a mediastinal neoplasm A barium mixture will help identify it But even the smaller ones are very much dilated and tortuous

Diverticula generally occur in the upper part of the esophagus, very rarely at the cardia Fluoroscopically one can sometimes observe the filling of the diverticulum until it spills over into the normal lumen Often the diverticula cause obstruction by pressure on the normal lumen Pressure on the esophagus may also be caused by aneurysms, mediastinal tumors and other extrinsic lesions

Benign strictures are sometimes encountered, they are generally caused by the swallowing of a corrosive Metallic foreign bodies are easily recognized, non metallic, such as fish bones, even beef or chicken bones, and vegetable or fruit seeds as a rule cannot be seen Occasionally an opaque mixture may help to localize the offender without identifying it

Stomach—In the stomach, ulcer and carcinoma are most frequent, syphilis less so, and other neoplasms, such as lymphosarcoma, are rare

Ulcer is generally characterized by a projection or niche or a flat defect on the lesser curvature, often it is accompanied by an hour-glass constriction on the greater curvature opposite Unless there is a niche, it is not easily recognized If the flat ulcer is large and the patient is in the cancerous age, neoplasm should be thought of

Carcinoma generally occurs on the greater curvature, less frequently it is found on the lesser curvature just below the cardia, but it may involve the entire gastric wall It appears as a defect in the gastric contour and may be shallow or deep, of smaller or greater extent Peristaltic waves are arrested at the proximal end and can often be seen to continue beyond the distal end of the lesion Sometimes the neoplasm may reach such size as to block the pylorus and cause partial or total obstruction, at other times the growth may cause an abnormal patency of the pylorus, allowing the food to pour through it into the small intestines, resulting in exceedingly rapid emptying

There is no characteristic roentgen-ray picture of any type of neoplasm All neoplasms appear as defects in contour Those on the lesser curvature can often not be differentiated from ulcers

Syphilis of the stomach also does not have distinguishing features It simulates ulcers or neoplasms In one case the syphilitic stomach resembled another which had been corroded by lye, without the history, an etiologic diagnosis could not have been made in either case

Duodenum—In the duodenum the most frequent lesion is ulcer of the first portion, the bulb To Cole of New York belongs the credit for having called attention to the presence of a persistent deformity in the case of duodenal ulcer Carcinoma of the bulb is rare It cannot be differentiated from ulcer and is generally diagnosed on the operating table and more frequently by the microscopist

Of late ulcers and carcinomas of other parts of the small intestine have been diagnosed with increasing frequency The former are more easily recognized the nearer they are to the stomach, especially if they show a niche, the latter generally show more or less marked constrictions with dilatation of the loops proximal to them But one should remember that not all constrictions are due to carcinoma, some may be caused by adhesions resulting from inflammation or surgical procedures A knowledge of the history of the case is important

Colon—In the colon ulcerative colitis, diverticula, neoplasms or adhesions can as a rule be recognized In ulcerative colitis there is absence of haustration when the colon is filled by an opaque enema, and there is a cylindric barium outline of the colon after the enema has been expelled Diverticula appear as more or less numerous small circular shadows scattered throughout the entire colon after its lumen is empty of the barium ingested or injected They are most frequent in the sigmoid Neoplasms manifest themselves by filling defects and constrictions, the latter may also result from adhesions.

One thing must be borne in mind that lesions of the colon occurring in the lower sigmoid, unless they are obstructive, may be overlooked. They are often hidden by the filling of the rest of the sigmoid. Various devices are resorted to, among others placing the patient in the Trendelenburg position. They sometimes help.

In making gastro-intestinal examinations it is important to combine fluoroscopy with roentgenograms. Palpation while screening will often eliminate an apparent constriction or filling defect. Duodenal bulbs may not show up on a large number of films, but may be discovered very quickly by fluoroscopic manipulation.

Gallbladder.—The gallbladder was the great bone of contention between two camps of roentgenologists, those who claimed ability to demonstrate the gallbladder and stones when present in almost every patient, and those who maintained that gallstones could be demonstrated only when they contain the necessary quantity of calcium salts and that a gallbladder, if and when demonstrated, did not necessarily mean a pathologic one. The discussion went on fast and furious until about three years ago, when Graham of St. Louis and his co-workers announced the successful result of their painstaking search for a chemical that has a selective action on the liver and from there is excreted into the gallbladder. A few of the roentgenologists who previously claimed the ability to demonstrate gallstones and the pathologic gallbladder in 100 per cent of the cases still belittle the value of the Graham test. But their number is rapidly diminishing. One of the things that the Graham test has settled above all is that the so-called gallbladder shadows that appear on films when no dye was given are, more often than not, something else. In many cases where the actual gallbladder shadow was demonstrated by the dye another pyriform density can be seen which in the pre-Graham days might have been called a gallbladder. As long as the dye was administered intravenously the method was applied sparingly, but now since the oral administration of tetraiodophenolphthalein has proved successful, no suspected gallbladder need go unexplored.

This method demonstrates the size, shape, contour and position of the gallbladder, and whether there are constrictions, kinks or other deformities. Normal emptying and filling time can be studied. The presence of radiotransparent gallstones can be shown by areas of transparency within the opaque gallbladder shadows. Opaque gallstones can be more certainly localized in the gallbladder, and sometimes additional transparent stones are revealed.

A word of caution. Transparencies may not be due to gallstones, but to gas in the overlapping intestines, and deformities may be due to the position of the patient and not to adhesions. Experience alone enables one to make the differentiation. Nonfilling of the gallbladder with dye means a pathologic condition in a large percentage of the cases in which it occurs. At least two attempts to fill it should be made before a definite pathologic diagnosis is made.

URINARY TRACT

In the urinary tract the roentgen ray not only enables one to demonstrate the size, shape and position of the kidneys, but also the presence, shape, size, number and location of calculi. It also enables one to follow the descent of the calculus. With the aid of opaque catheters it is possible to identify concretions as urinary calculi or extra-urinary bodies, and with opaque solutions injected into renal pelvis and calices, into the ureter or into the bladder, they assist one in demonstrating radiotransparent calculi, hydronephrosis or pyonephrosis, polycystic, horseshoe or fused kidney, tumors, malformations of kidney, perinephric abscess, kinks, dilatations (hydro-ureter), constrictions and diverticula or other lesions of the ureter, including double ureters and renal pelves. Injection of opaque solutions, occasionally of air, into the bladder will help demonstrate enlargement of the prostate, tumor of the bladder wall, or diverticula.

Dependable roentgenograms of the urinary tract must include the last two or three ribs, the entire width of the abdomen and pelvis, and an area at least 1 inch below the inferior border of the symphysis pubis. Both ischial tuberosities should also be seen. Its quality must be such as to demonstrate clearly both kidneys (sometimes gas in the colon may obscure one or both), the edges of the psoas muscles and the transverse processes of the lumbar vertebrae.

The demonstrability of the calculus depends on its chemical composition. Calculi containing calcium and the cystine stones show very clearly the pure urates not at all. Fortunately the latter occur most frequently in the bladder (about 60 per cent), where they can be diagnosed by the cystoscope less frequently in the ureters (about 10 or 12 per cent), and very rarely in the kidney (about 5 per cent).

When interpreting the roentgenograms, one must bear in mind that substances other than urinary calculi may cast suspicious shadows which should not be mistaken for calculi. Of such extra-urinary shadows reported in the literature the following are perhaps the most frequent phleboliths barium residue in the appendix or other parts of the gastro-intestinal tract foreign bodies, gallstones especially when solitary, calcified mesenteric glands, which as a rule are reticulated and can thus be differentiated from calculi calcifications in tuberculous or carcinomatous kidneys, inspissated pus calcification of the tip of the transverse process of one of the lumbar vertebrae compact islands in the sacrum or ilium sclerosis of the iliac arteries, calcifications in a myoma and dermoid cyst. These require considerable experience in reading roentgenograms for differentiation from calculi.

The body surface of the patient, especially the back, ought to be carefully inspected at the time of the examination, so as to avoid mistaking for calculi the following, which often cast dense shadows warts and pigmented moles, scabs on a wound, especially when some metallic paste has been applied to it scars of former operations and adhesive plaster, especially when folded. Intestinal contents can be eliminated by a reexamination after more thorough catharsis and the cessation of metallic medication.

A new source of error which will plague the roentgenologist in the near future is the iodized oil introduced into the fallopian tubes where it apparently will remain forever. Cases have been seen in which it remained for many months.

THORACIC VISCERA

In the thoracic viscera a combination of fluoroscopy and roentgenography will produce the best results. In cardiovascular diseases the former gives more valuable information, in diseases of the lungs, especially early tuberculosis, the film is superior, for it reveals fine detail in the lung picture that cannot be observed on the screen.

In many a case the shadows cast by pathologic changes allow of more than one interpretation; the history may then be the deciding factor. The danger, of course, then is that one may be swayed too much by one's clinical conception of the case.

Important as the knowledge of the roentgenologically normal is in every part of the body, it is of much greater moment in the study of diseases of the chest. Here changes in structure begin to occur almost at birth and continue through to the end. In addition to age, occupation plays a great part as well as previous diseases affecting lungs and circulatory apparatus. Sex plays a part in that the female breast will make the normal bases appear fairly dense.

True, all these changes, whether due to age, occupation or previous disease, are pathologic in the strict anatomic sense, but clinically they may have no significance and have no bearing on the patient's present condition.

Knowing, then, that the lungs of a person at 50 have undergone certain changes which were not present at 25, or that the lungs of an iron-worker, a coal-miner or a marble-cutter may develop certain fibrotic changes as the result of the inhalation of dust particles, one would not rashly conclude that the lung markings or the hilum shadows denote, for instance, tuberculous lesions, but are merely the normal or the usual condition for the particular patient. Furthermore, the knowledge that the lung markings pictured on the roentgenogram are preponderatingly due to blood vessels will guard the observer against mistaking their congestion in cardiac disease for pulmonary infiltrations.

It is also important to remember that with age the hilum shadows increase in size and density, and that the aorta, becoming atheromatous, will appear more prominent in the descending portion of its arch. How many times has this phenomenon been mistaken for an aneurysm!

Roentgen-ray shadows in the lungs cannot be accepted as "characteristic" of any given pathologic condition. We depend, frequently, more on their location than on their appearance. There are a few exceptions; early tuberculous lesions, for instance, which usually occur in the infraclavicular spaces, are generally seen as faint densities of delicate texture extending from the periphery upward. Later, when fibrosis has occurred, the fine strands become denser and more sharply defined. Such images which occur more often in the right than in the left upper lobe are definite evidence of tuberculosis. *But the coarse strands which extend from the hilum outward, especially in the lower portions of the chest, are due mainly to blood vessels and should not be mistaken for pathologic infiltrations.*

Tuberculosis.—The various changes occurring in the progress of pulmonary tuberculosis are strikingly depicted on the roentgenograms. The early lesions are generally well circumscribed areas of fair density and are made up of nodules and an exudate surrounding them. In healing, the exudate will be absorbed and only very small, dense shadows of the nodules will remain. If the disease progresses these areas become larger, more irregular in outline and denser. In advanced cases both upper lobes and even both lungs may become involved. Frequently the trachea is displaced to the side first affected. There may be a combination of the denser, older lesions and of the fainter more recent invasion. If caseation occurs, the shadows are very dense and irregular in outline. Cavity formation will often occur. In the earlier stages the wall of the cavity may be very thin; later, increasing infiltration around it will be seen as a thick wall and may even hide the cavity almost completely. Frequently more than one cavity will be seen. The walls between them may break down and one very large cavity may result. Occasionally a fluid level can be recognized. If it is large enough to be seen on the fluoroscope, the fascinating spectacle of a shifting fluid level can be had. Small cavities have sometimes disappeared. This has given rise to the contention that they are not cavities in the lungs but merely localized areas of pneumothorax.

If the moderately advanced lesion heals, the infiltration becomes well circumscribed and dense fibrotic bands or calcified areas will be seen.

Tuberculosis of the miliary type presents a striking picture. Both lungs are dotted throughout with very small, fairly dense circular shadows. Occasionally the lung only, and no other part of the body, is affected. This type usually heals and is not so fatal as the generalized acute miliary tuberculosis.

The lesions as a rule involve first the upper lobes. Except in children, hilum tuberculosis is rare; so is tuberculosis limited to the lower lobes. This atypical form may occur in cases of diabetes mellitus or with deformity of the chest, such as kyphoscoliosis.

A word of warning: activity cannot be diagnosed from a roentgenogram.

Pneumonia.—Lobar pneumonia appears as a homogeneous shadow of lobar distribution. It may involve part or all of a lobe, or even more than one. In the stage of consolidation or hepatization, the shadow is very dense and lung markings can hardly be distinguished; in the stage of resolution, the density is less uniform and lung markings begin to show. The value of the roentgen ray lies not so much in the diagnosis of the presence of the disease as in the determination of the stage of the disease, the progress of resolution, the presence of pleural effusions, or the development of gangrene or abscess. The rays also aid in the more exact localization of the disease.

Massive collapse, which occurs after trauma or surgical procedures, causes practically the same density of a lobe or of the entire side of the chest as that seen in lobar pneumonia. It may be distinguished from the latter by the displacement of the heart and mediastinum to the affected side and by the comparatively larger size of the normal side.

Bronchopneumonia presents irregular patches of infiltration scattered throughout both lungs. They may become confluent, and when limited to the area of a lobe may be easily mistaken for lobar pneumonia. If the infiltrations are discrete they may simulate tuberculosis. In that event the true nature of the disease may not be recognized until the lungs become clear.

Abscess.—Abscess and gangrene of the lung may be the result of aspiration of foreign bodies or infectious material, or may follow pneumonia. The former is more frequent in the upper lobes, especially the right, the latter at the bases. If an incompletely filled cavity is present, this condition is easily recognized. If fluid in the cavity completely fills it and there is marked inflammatory infiltration around it, it may be indistinguishable from pneumonia. Here, again, the history will help make the diagnosis.

The process may heal spontaneously in approximately 30 per cent of the cases Depending on the extent of the lesion, the lung may return to almost normal or marked fibrosis may result

Bronchiectases—These resemble a honeycomb in appearance When all the cavities are filled, this characteristic observation may be absent, and the lesion in the lung resemble that of lobar pneumonia, or small patches of bronchopneumonia

Iodized oil, injected intratracheally, aids in the localization of abscesses and bronchiectases and shows the size and number of cavities

Syphilis—Syphilis of the lung is occasionally encountered It has no characteristic lesion It may involve the region of the hilum or any other part This diagnosis should be made only by the history, a positive Wassermann reaction and the result of antisyphilitic treatment

Emphysema—In emphysema there is generally a greater transparency of the lungs and an increased width of the intercostal spaces, and the difference in transparency between inspiration and expiration is very slight In unilateral obstructive emphysema in children due to the aspiration of radiotransparent foreign bodies there is a depression of the diaphragm on the affected side and displacement of the heart to the opposite side It is best studied fluoroscopically because it is most evident at expiration

Tumors—Tumors of the lung which are either primary or metastatic, endobronchial or parenchymatous (lobar) can be readily localized by the roentgen ray, but cannot always so readily be diagnosed as such by the roentgenogram alone The history, a primary lesion elsewhere, and the age of the patient may be necessary for the diagnosis

Primary tumors are always the carcinomas The endobronchial, if small and causing no stenosis with consequent atelectasis, may not be demonstrated as early as the patient's symptoms manifest themselves Often when there is a marked infiltration in the adjacent area the differentiation from a nonmalignant condition, such as pneumonia, cannot be made, and the bronchoscope must be resorted to Generally, however, there are metastases in the other lung or in the ribs, so that recognition of the lesion is not difficult

Parenchymatous tumors may resemble lobar pneumonia

Metastatic tumors, whether carcinomas or sarcomas, have an irregular distribution Carcinomatous metastasis in particular often appears miliary in character, so that the differentiation from tuberculosis may be extremely difficult The presence elsewhere of a primary lesion, whether operated on or not, and the fact that these infiltrations have a distinct circular outline which miliary tuberculosis has not, will help in their recognition Another distinguishing feature is the frequent noninvolvement of the apexes

The Pleura—The normal pleura is not demonstrable by the roentgen ray, nor is dry pleurisy When the pleura has become thickened, it casts a shadow whose density is in proportion to the thickening Sometimes there is difficulty in differentiating it from effusions or pulmonary infiltrations

Pleural effusions, whether serous or purulent, present equally dense shadows The early fibrinoplastic exudate may be seen as a line running parallel to the periphery of the lung from apex to base Larger free effusions, but without the presence of air or gas, will be seen as a density with a concave upper limit occupying the lower portion of the chest Encapsulated effusions are generally present near the axillary border of the chest in the upper or the lower portions, or in both They may be multilocular, but their shadows may fuse, so as to appear as one Often the lower collection is smaller than the upper, and the surgeon is surprised at the small quantity of pus he obtains until he makes another incision higher up and drains both cavities Interlobar effusions are readily recognized on the right side by the straight line running from axilla toward the hilum at the level of the sternal end of the fourth rib On the left side the obliquity of the shadow generally prevents its demonstration

Pneumothorax is brilliantly shown by the uniform transparency and by the absence of any lung markings in the side of the chest involved The collapsed lung stands out very sharply against the air or gas, its density depending on the degree of collapse Heart, aorta and mediastinum are generally displaced to the opposite side When both fluid and air are present, there is a fluid level which shifts with the change of position of the patient

Tumors of the pleura cause dense shadows, which are due to the thickening of the pleura itself or to the additional presence of fluid The differential diagnosis can be made only from the history or the presence of metastases in the opposite lung or in the ribs

Tuberculosis of the pleura, aside from presenting adhesions, thickening or an effusion, may in rare instances show irregular calcifications which can be localized on the pleura by stereoscopic examination

The Diaphragm—In the study of the diaphragm, the fluoroscope is more important than the film Normally the diaphragm appears as a domelike shadow on both sides of the spine The right side is generally higher than the left and merges with the shadow of the liver, the left, being situated over the stomach and splenic flexure, both of which contain air or gas, is seen as a narrow curved dense band Depending on the stature of the patient, the position of the diaphragm varies In tall, thin persons it is low, in the stout it is high

Adhesions will cause irregularities in the convexity on either side On the right side, however, there are often seen, on deep inspiration, small humps which are normal and should not be mistaken for adhesions

Pulmonary tuberculosis or pneumonia often causes restriction in the movements of the diaphragm on the affected side, even if the lesion is at a distance above it

Subphrenic abscess or other effusion results in an elevation of the diaphragm on the affected side On the left side, where the effusion may be interposed between diaphragm and stomach, there is sometimes seen a broad dense shadow between the two with the gastric bubble below it

Eventration, which is more frequent on the left side, will show the diaphragm as a narrow dense curved band high in the chest, with distended stomach and intestines below it The heart and the mediastinum are displaced to the right

The differentiation of this condition from diaphragmatic hernia is often very difficult An opaque meal will sometimes place part or all of the stomach above the diaphragm in case of hernia, especially when the patient is examined in the recumbent or Trendelenburg position Pneumoperitoneum, on the other hand, by showing the gas above the stomach and below the diaphragm, will help determine the presence of an eventration

The Mediastinum—Of the pathologic conditions occurring in the mediastinum, an enlarged substernal thyroid, a persistent thymus, enlarged glands of tuberculosis or Hodgkin's disease, and tumors, are the most important The enlarged thyroid, when it extends into the chest, will be seen as a dense mass in the paravertebral portion compressing the trachea or displacing it to one side The persistent thymus appears as a broad band above the heart One should be on guard, however, not to mistake the broadening of the mediastinal shadow, which occurs during expiration or while the crying child holds its breath, for an enlarged thymus Tuberculous mediastinal glands are generally denser and sometimes partially calcified The glands of Hodgkin's disease are, as a rule, more lobulated Frequently it is impossible, roentgenologically, to differentiate between these conditions

Tumors of the mediastinum are more frequently malignant than benign Of the latter, cysts are seen most often, of the former, lymphosarcomas Differentiation between the two varieties is often difficult, as a point of distinction it may be stated that the malignant types have a tendency to be lobulated

Aneurysm—Of equal difficulty and importance is the differentiation between tumor and aortic aneurysm Fluoroscopy may sometimes be of assistance, as aneurysms are apt to show pulsation while tumors will not But often transmitted pulsation of a tumor will simulate an aneurysm, or a thick-walled aneurysm will not pulsate at all Occasionally it is possible by fluoroscopy in oblique directions to separate the tumor from the aorta and thus discover the true nature of the shadow

Aortic aneurysm is best studied fluoroscopically If the ascending aorta is involved there is a convex shadow to the right of the spine which becomes accentuated when the patient is observed in the second oblique position, i e, the left side of the chest to the screen, the right toward the tube Aneurysm of the descending aorta will show a widening of its shadow to the left and, in the first oblique position, it will be seen to encroach on the posterior mediastinum Aneurysm of the arch is best seen postero-anteriorly as a large spherical shadow above that of the heart In the first oblique position its encroachment on the posterior mediastinum and, if the patient swallows a barium mixture during the observation, the degree of pressure on the esophagus, if any, can be determined In this position one can in extreme cases study the erosion of the thoracic vertebrae in this area

Syphilitic aortitis is shown as a widening of the ascending portion just above the heart Like aneurysm of the ascending aorta, it is best seen in the second oblique position

In arteriosclerosis the aorta seems widened, sometimes it is tortuous, and frequently calcified plaques can be seen in the descending portion of the arch

The Heart—In the cardiovascular shadow the following points are to be noted On the right side there is a curve above the diaphragm representing the right auricle, above it is a nearly straight line representing the superior vena cava, on the left side there are, from above downward, the descending portion of the aortic arch, the pulmonary artery, the left auricle (often not clearly visible), and the left ventricle

The position of the heart and, consequently, its apparent shape are affected by the stature of the patient In tall, thin persons in whom the diaphragm is low, it is nearly vertical and, in extreme cases, presents the so-called drop heart In stout persons with much intra-abdominal fat, the heart is raised and rotated on its long axis and is situated more or less transversely In unilateral elevation of the diaphragm from whatever cause, it is generally displaced to the opposite side Deformity of the chest, such as kyphoscoliosis also causes marked displacement of the heart

The size of the heart, unless there is marked enlargement, is not of great importance, save for comparison at different times in the same individual Actual change in shape, however denotes an organic lesion

The changes produced by valvular lesions are clearly revealed by the roentgen ray

In mitral insufficiency the entire cardiovascular shadow is enlarged, which is due to hypertrophy of the left auricle and of the right ventricle and to dilatation and hypertrophy of the left ventricle

In mitral stenosis the left auricle is markedly enlarged because of hypertrophy and dilatation The pulmonary artery may be slightly enlarged

In aortic insufficiency the left ventricle is markedly enlarged because of the combined hypertrophy and dilatation The enlargement is mainly to the left

In aortic stenosis there is slight enlargement of the left ventricle owing to hypertrophy The appearance somewhat resembles aortic insufficiency, except that the enlargement of the left ventricle is less marked

In hypertension the hypertrophy of the left ventricle gives the heart the so-called egg-shape appearance Frequently associated with it is atheroma of the aorta, which is shown by dilatation of the ascending portion of the arch and of the descending portion, the latter sometimes hiding the pulmonary artery

Of congenital heart lesions, patent ductus arteriosus has the most characteristic roentgen-ray appearance—marked enlargement of the pulmonary artery

Pericarditis without effusion is not recognizable by the roentgen ray When effusion is present, especially when the quantity is large, the shadow is flask-shaped and often occupies as much space to the right of the median line as to the left The normal curves have disappeared and the pulsations cannot be seen The cardiohepatic angle generally persists in about 50 per cent of the cases

THE REPRODUCTIVE ORGANS

In gynecology and obstetrics the roentgen ray was until recently of comparatively little value in diagnosis Occasionally a fibroid tumor was discovered by calcification within it or a dermoid cyst of the ovary by the presence of rudimentary or well formed teeth Sometimes a fetus can be shown in the early months of pregnancy, as a rule not before the third month In later months the position of the fetus and the number, in case of twins or triplets, may be learned

With the introduction of pneumoperitoneum it became possible to demonstrate the pelvic organs, the patient being placed in an extreme Trendelenburg position to allow the gas to fill the pelvis

In 1919, Rubin began to use the roentgen ray for the determination of the patency of the fallopian tubes This is done by injecting into the uterus a gas which escapes into the peritoneal cavity if one or both tubes are patent Following this, fluoroscopy or roentgenography is done with the patient in the upright position If the gas is found under the leaves of the diaphragm then at least one fallopian tube is patent It is not possible by this method to say which it is or if both are patent It has been found safest to use carbon dioxide because it is absorbed most rapidly This procedure is contraindicated in acute or subacute disease of the adnexa because of the possibility of infection, another contraindication is a degenerated fibroid.

Within the last few years Rubin and others have used injections of iodized oil in the study of the anatomy and function of the uterus and tubes.

PNEUMOPERITONEUM

Most of the special methods used in conjunction with roentgen-ray examinations have been referred to while dealing with the skull, chest, urinary tract and gynecologic conditions. One method, however, that was briefly referred to in connection with eventration of the diaphragm, namely, pneumoperitoneum, ought to be mentioned here, as it is of great aid in properly selected cases for the demonstration of intra-abdominal disease which cannot otherwise be determined. The most important is adhesions between abdominal viscera and the parietes, sometimes between each other. Subphrenic effusions can be better demonstrated in doubtful cases, also irregularities in the outline of the liver, enlargement of the spleen, occasionally kidney tumors, and retroperitoneal masses. As this procedure is fraught with a none too negligible risk to the patient, it should be resorted to only when absolutely necessary and other means of diagnosis have failed.

CONCLUSIONS

The foregoing sketch should not be concluded without commenting on the present-day tendency of clinicians to equip their offices not only with fluoroscopes but with complete roentgen-ray diagnostic outfits. The technical work is generally done by the office nurse, who has received her hasty instruction from the manufacturer's salesman; at best, a lay technician who has had a somewhat better training presides over the apparatus. The result in the majority of cases is technically poor films interpreted by roentgenologically ill prepared diagnosticians. While the technical difficulties might be overcome, the interpretation of the roentgenograms will continue to have its difficulties, because the clinician has neither the time nor the opportunity to acquire the necessary skill and experience.

The supposed advantage in favor of the clinician is his knowledge of the clinical aspects of the case. This is more than overcome by the natural tendency to favor an interpretation which bolsters up a clinical preconception, and by the unavoidable lack of knowledge of general roentgen-ray pathology with the consequent failure to observe pathologic conditions other than those looked for. As one of many examples, the following case may be cited. A gastro-enterologist who makes his own roentgen-ray diagnosis consulted a roentgenologist as to the nature of a concretion on a film of the urinary tract, but he had overlooked an advanced degree of carcinomatous metastasis in the lumbar spine and pelvis. Similar cases could be cited ad infinitum.

The roentgenologist, on the other hand, has or should have an up-to-date knowledge of roentgen-ray pathology as affecting all parts of the body and all pathologic conditions, and is therefore on the alert for all changes shown on the roentgenogram, whether suspected from the clinical history or not. His lack of familiarity with the patient's history can be overcome by cooperation between him and the clinician.

Serious as the situation is from the standpoint of the patient, who is not apt to obtain the best result to which he is entitled, it is more serious from the standpoint of the development of roentgenology as a diagnostic means. Today, the young man who has the desire to devote himself to roentgen-ray diagnosis is discouraged to find that as a specialist he will be unable to earn his livelihood. As a consequence, many a young physician who would have become a good roentgenologist seeks another medical specialty, and roentgenology is the loser. While the part played by a few clinicians in the development of roentgen-ray diagnosis cannot be denied, it is nevertheless true that most progress in this field has come and must come from those who devote their entire time and energy to it alone.

It is curious that a clinician who would not risk diagnosing the gross lesions found on the operating or the postmortem table will not hesitate to diagnose the shadows such lesions cast on a roentgenogram. Perhaps it can be explained psychologically. In roentgen-ray diagnosis a photographic plate or film is used, the result is a "picture," and what is easier than looking at a picture? There is hope that the time will come when it will be realized that interpreting the meaning of the shadows seen on the roentgen-ray "picture" requires as much skill and study and experience as the interpretation of the picture seen through a microscope.

Council on Pharmacy and Chemistry

REPORTS OF THE COUNCIL

The Council has authorized publication of the following report. W. A. Puckner, Secretary.

Articles Not Acceptable

POLIOMYELITIS ANTISTREPTOCOCCUS SERUM

Preliminary Report of the Council on Pharmacy and Chemistry

The use of a specific antiserum in the treatment of poliomyelitis has been proposed. A number of reports on the use of such a serum have been published. Two commercial products, each obtained by immunization of horses against strains of streptococcus from poliomyelitic patients have been submitted to the Council. The Council has not felt justified in accepting these for inclusion in New and Nonofficial Remedies on account of the following objections:

(*a*) The organism from which the serum is produced by the treatment of horses is not generally accepted as the etiologic agent of poliomyelitis.

(*b*) The published reports on the serum are generally favorable, but there is considerable question as to whether the groups of control cases are directly comparable. Physicians who have given special attention to the treatment of poliomyelitis have expressed the opinion (verbally) that it is not fair to make comparison between the treated cases on the one hand and the general figures for mortality on the other. They believe that under these conditions controls will show a less favorable death rate than the treated cases because of a tendency to select for treatment cases seen early, whereas a larger proportion of severe cases will be found in control groups unless great care is exercised.

(*c*) It has been found that, on account of widespread favorable newspaper publicity given the serum, the physician often feels compelled to use it, though not convinced of its efficacy. Indeed, laymen often demand its employment. One health officer advises it in order that the physician may protect himself against adverse criticism. Personal contact with physicians who have had opportunity to observe the serum but who did not wish to publish their data or to be quoted directly, indicated great doubt as to the usefulness of the material.

In view of these considerations the Council decided not to accept any poliomyelitis antistreptococcus serum until more positive evidence for its usefulness becomes available.

THE JOURNAL OF THE
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SATURDAY, FEBRUARY 25, 1928

SEPARATION OF THE ACTIVE PRINCIPLES OF THE POSTERIOR LOBE OF THE PITUITARY GLAND

Like the pancreas and the suprarenal glands, the pituitary contains two portions that differ in function and in pharmacology Sollmann[1] has pointed out the remarkable fact that the parts of the suprarenal and pituitary which are the most important to life have the least pharmacologic actions, while the parts whose extracts produce exceedingly striking pharmalogic effects—the suprarenal medulla and the posterior pituitary—appear to be of minor importance to the organism Equally remarkable are the manifold activities of the extract of that portion of the pituitary gland which is not so important to life, as exemplified in the official solution of pituitary (posterior pituitary lobe), its effect in stimulating uterine contractions (oxytocic activity), its ability to raise blood pressure (pressor activity) and its marked diuretic-antidiuretic effects (renal activity) are well known The chief clinical applications of these effects are in themselves likewise widely variant, the use of pituitary solutions to stimulate uterine contractions in labor, the employment in conditions of low blood pressure and in postoperative intestinal paresis, the injection of extract of pituitary, which causes pronounced antidiuresis in diabetes insipidus, though, as Useful Drugs emphasizes, merely temporary in effect These different observations alone may arouse skepticism as to whether or not the activity is due to a single substance Critical reference books, such as New and Nonofficial Remedies, cautiously refer to the extractive material from the posterior pituitary lobe as "substance or substances"

The chemical information concerning the pharmacologically active constituents of extracts of pituitary is rather meager While a number of investigators have undertaken some exceptionally creditable researches, until the present time the evidence has not been sufficient to warrant a positive statement as to whether or not the activity is due to a single chemical substance or hormone The American investigators of the posterior lobe of the pituitary gland, particularly those of the U S Hygienic Laboratory and of the Abel school, have leaned toward the unitarian theory English workers have advocated the multiple hormone theory Some Germans have even claimed the presence of more than three principles In one of his recent articles on the pituitary extract, Abel,[2] the most prominent biochemist in this field, stated that "we therefore conclude that all the evidence at hand is greatly in favor of our belief that the oxytocic, pressor, diuretic and respiratory activities referred to above are properties of one and the same substance "[2]

Connected with the debate concerning the active principles has been the matter of assay The United States Pharmacopeia fixes the oxytocic method of standardization, which in the hands of most workers has shown itself to be amply sufficient for determining the relative strength of commercial preparations On the other hand, workers in the laboratory of Parke, Davis & Co, which firm first introduced solution of pituitary as a proprietary brand, for the past ten years have contended for a blood pressure method of assay in addition to the oxytocic as far as it concerned their own product[3] As a result of the observations of many assays by the double method, as well as some other factors, the Parke, Davis & Co workers felt that the evidence of more than one principle could probably be indicated by the two different quantitative biologic methods of determining activity, if applied to various fractionations of the posterior lobe The results of a well conducted research by Kamm, Aldrich, Grote, Rowe and Bugbee[4] on this problem have just been made available Using also methods of fractionation by precipitation and methods of dialysis, they obtained two portions of pituitary extract, one of which responded almost entirely to the oxytocic method of assay and hardly at all to the pressor method, whereas another portion was found to respond to the pressor method and practically not at all to the oxytocic It will be recalled that some time ago Abel and his co-workers reported the isolation of a potent preparation which stimulated the excised guinea-pig uterus in a dilution of 1 20,000,000,000 Kamm and his colleagues advance the argument that the product of Abel was exceedingly strong in oxytocic activity and much less in the pressor activity In other words, it is their belief that Abel had been working with a partial separation of the active principles, which separation is more easily recognized when two quantitative methods of assay have been applied Furthermore, Kamm has reported that, by recombining the fractions in the original proportions, a pituitary solution may be obtained indistinguishable from the original, thus showing that injury to the active principle has not taken place owing to separation Both the principles, according to these workers, have been obtained in a state of highly potent water-soluble powders They report that the substantially pure pressor principle, which they term β-hypophamine, has been obtained as a white powder eighty times as potent as the International Standard Powdered Pituitary, while the oxytocic principle (α-hypophamine) has been obtained in a form 150 times as potent as the International Standard Powdered Pituitary In this research the indications are that the pressor principle is responsible for the diuretic-antidiuretic action of the pituitary extracts

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[1] Sollmann Torald Manual of Pharmacology ed 3 p 462

[2] Abel J J Rouiller C A and Geiling E M K J Pharmacol & Exper Therap **22** 289 (Nov) 1923

[3] According to method of Hamilton and Rowe J Lab & Clin Med. **2** 120 (Nov) 1916

[4] Kamm Oliver Aldrich T B Grote I W Rowe L W and Bugbee E P The Active Principles of the Posterior Lobe of the Pituitary Gland I The Demonstration of the Presence of Two Active Principles II The Separation of Two Principles and Their Concentration in the Form of Potent Solid Preparations J Am Chem Soc. **50** 573 (Feb) 1928

This important separation of the principles of the extract of pituitary should now make it possible for the physiologist, the pharmacologist and the clinician to interpret more correctly the responses caused by the administration of solution of pituitary Furthermore the chemical identity and isolation of the principles is another step necessary toward the more complete understanding of the profound influences and actions of the pituitary gland Undoubtedly this will lead to clinical applications of these principles, though at present the work is in an experimental state The medical profession will look forward to further observations along these lines and to the outcome of the clinical applications of such compounds under controlled conditions, a report on which will be made available in the near future, no doubt, by the Council on Pharmacy and Chemistry of the American Medical Association

EXERCISE AND THE SPLEEN

The relative mass of muscle tissue in the body is so large that the nature of the chemical changes occurring in it dominates the metabolic picture of the whole organism Thus the combustion of foodstuffs taking place in the muscle is responsible for the traditional conception of the animal body as an acid-producing organism The large production of carbon dioxide and other acids incident to biologic oxidation justifies this view There is, however, another aspect from which to consider the physiologic importance of muscle Vigorous muscular activity calls forth a series of reactions surprising in their intensity, diversity and far-reaching effects The production of lactic acid during the cycle of contraction results indirectly in a respiratory response in the direction of increased pulmonary ventilation If the activity is prolonged, the hydrogen ion concentration of the blood may increase perceptibly and lactic acid may appear in the urine The augmented heat production is another recognized accompaniment of exercise The change in the circulatory system is one of the most striking features of the mass response of the body to the demands of muscular activity There is a prompt increase in heart rate and a concomitant augmented circulation rate together with an increased oxygen-carrying power of the blood because of an elevated concentration of hemoglobin and erythrocytes The probable mechanism involved in this efficient adaptation has received considerable attention, but only recently has attention been focused again, and from a somewhat different point of view, on the spleen, an organ that appears to play a larger part in the circulatory response to exercise than has heretofore been suspected

In a series of experiments recently reported Barcroft and Stephens[1] have obtained data on the variation in size of the spleen correlated with exercise The organ was observed directly in situ and also after being withdrawn intact from the abdomen as a permanent extracutaneous appendage The results obtained by the two methods are concordant After a tracing of the contour of the spleen of the resting dog had been obtained the animal was caused to run round a track, to climb stairs or to swim in a tank of warm water After each form of exercise there was a striking decrease in the size of the spleen, amounting to as much as 50 per cent in one swimming experiment and 75 per cent in a given running test The most frequent values obtained for contraction ranged from a third to a half of the resting size of the organ Accompanying this alteration in volume is a change in color, the previously dark red tissue becoming pale Similar changes in dimension of the spleen occur after hemorrhage, likewise the size was always less after death than during life Calculations of the blood volume of the dogs in these experiments indicate that the shrinking of the spleen could account for as much as one fifth the normal blood volume, an addition to the oxygen-carrying capacity of much importance under the stress of vigorous exercise The splenic blood, it should be recalled, has a greater concentration of erythrocytes than that of the systemic circulation[2]

The English investigators point out that the diminution in the size of the spleen is not clearly proportional to the duration of exercise but seems to be a response occurring early in the period of muscular activity Experiments of a supplementary nature have been obtained by Scheunert and Krzywanek[3] who could not demonstrate any difference in red blood cell concentration before and after exercise in splenectomized dogs one year after the operation From this observation they concluded that the spleen is the only reservoir of this kind for blood

A phenomenon of such relative magnitude and susceptible of being reproduced stimulates inquiry into the mechanism of the reaction In the investigation of Barcroft it was found that when psychic reactions implying exercise were elicited there followed regularly a decrease in the size of the spleen, a fact suggesting a nervous control rather than a humoral pathway This was shown to be true by the failure to observe a change in size after exercise when the organ was denervated Similar conclusions may be drawn from the experiments of Hargis and Mann[4] With dogs in which the spleen was contained in situ in a permanent oncometer, clapping the hands, teasing or similar stimuli resulted in a decrease in size of the organ, only, however, when the nerves were intact The ultimate cause of the contraction may rest in the muscle fibers of the spleen or in the alteration of capillary size

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[1] Barcroft J and Stephens J G J Physiol **64** 1 1927

[2] Scheunert A and Krzywanek F W Arch f d ges Physiol **213** 198 1926

[3] Scheunert A and Krzywanek F W Arch f d ges Physiol **217** 261 1927

The spleen has long been an organ of mystery From ancient times varied functions have been attributed to it, but it was early found that it is not essential to life The equivocal results obtained when experimental proof of various hypotheses of function was sought caused interest in this organ to diminish The studies now made available have served to redirect attention to the physiology of this organ

CLASSIFICATION OF STREPTOCOCCI

In the annals of nature, wars within species, even world wars, have minor rank, for the species survives with the victors Struggles between species, however, are wars of extermination In this class is man's fight against those forms of animal and of plant life which are harmful to him David and Robert Thomson see in the struggle against the invisible bacteria and protozoa man's last effort for complete domination over the lower forms of life As yet, they state, the bacteria are our masters "They are the chief causes of our miseries and our death"

In a recent publication,[5] knowledge is collected which may make more effective the fight against one of man's chief enemies, the streptococcus Such a collection is greatly needed for, up to the present time, precise knowledge has existed only with regard to the group of hemolytic streptococci Bergey, in 1925, described twenty-four species of streptococci It seems likely, however, that several hundred varieties exist

H Warren Crowe[6] lays down three essentials necessary to the classification of living organisms 1 Types must be constant 2 Individuals or types must be recognizable 3 Biologic characters must be diverse enough for differentiation but constant enough to enable them to be known again After many years of work, Crowe has developed a medium on which, in primary culture, all nonhemolytic streptococci can be separated into four main groups Subsequent divisions can be made, respectively, into subgroups and varieties The medium must be used in plate cultures, and, contrary to the usually admitted desideratum, it is opaque Reflected rather than transmitted light brings out the distinctions, and a hand lens or low power microscope also may be employed The four main classes are identified according to whether they color the medium yellow, green or black, or leave it unchanged Subgroups and varieties are identified by the recognition of more minute characteristics

The Thomsons by a different method have made divisions similar to those of Crowe After a preliminary examination, which includes an anaerobic culture, they separate the organisms into five main groups For this work they incubate aerobically for from two to six days on testicular agar plus 5 per cent boiled blood and inspect the growths with the naked eye Color changes in the medium are here also the basis of classification To the extent that the period of acquaintance and the distance between their laboratories have allowed of comparison, the efforts of the Thomsons and of Crowe are in accord The Thomsons, however, have employed photography on a large scale in their work This additional measure may prove to be of great value By this means records of appearance of colonies and organisms are rendered permanent, exact and portable It is a method that lends itself to standardization, and standardization there must be if the varieties of streptococci are ever to be separated and identified That such identification is vital to the development of effective treatment against many clinical disorders is a strong probability—to those who know most about the streptococci it seems almost a certainty

Current Comment

COORDINATION OF FEDERAL HEALTH ACTIVITIES

The House of Delegates of the American Medical Association has endorsed[1] pending legislation to coordinate federal health activities with a view to increased efficiency and economy, commonly referred to as the Ransdell bill[2] and the Parker bill[3] These bills are identical so far as they authorize the President to consolidate and coordinate the public health activities of the government, provide for cooperation by the Public Health Service with other agencies of the federal government and with state governments, and open the resources of the Public Health Service to students who desire to conduct serious research in public health problems They make the same provisions, too, for reorganization within the service, designed to increase its efficiency The Ransdell bill goes further, however, and authorizes an appropriation of ten million dollars to establish and operate a national institute of health to study the fundamental problems of diseases of man and matters pertaining thereto, and authorizes the government to receive gifts and bequests to further the activities of the institute In the Senate, the Ransdell bill is pending before the Committee on Commerce, and action has thus far not been taken on it In the House of Representatives, the Parker bill was referred to the Committee on Interstate and Foreign Commerce, and public hearings have been held by a subcommittee The hearings were marked by protests against any authorization of the consolidation in the Public Health Service of the public health functions of the government, emanating chiefly from interests that professed fear lest a transfer of functions from the Department of Agriculture to the Public Health Service might disturb commercial practice and relations The usual objections also were raised by interests opposed to any progress in public health research or administration along scientific lines The subcommittee has made its report to the Committee on Foreign and Interstate Commerce, but that committee has not yet reported the bill back to the House for action Physicians interested in the advancement of public health and desiring to see the policy of the Association as determined by the House of Delegates carried into effect should express their views to their respective Senators and Representatives, more particularly to the chairman of the Senate Committee on Commerce, Hon Wesley L Jones of Washington, and to the chairman of the House Committee on Interstate and Foreign Commerce, Hon James S Parker of New York

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[4] Hargis E H and Mann F C Am J Physiol 75 180 (Dec) 1925

[5] Thomson David and Thomson, Robert Historical Survey of Researches on the Streptococci Annals of the Pickett Thomson Research Laboratory 3, November 1927

[6] Crowe H W The Differentiation and Classification of the Non hemolytic Streptococci by the Use of Crowe s Medium Annals of the Pickett Thomson Research Laboratory 3 251 (Nov) 1927

[1] Proceedings of the House of Delegates 1927 p 58

[2] S 871

[3] H R 5766

THE NEW ENGLAND JOURNAL OF MEDICINE

Centenarians are rare in any living activity The *Boston Medical and Surgical Journal*, as reported under the news from Massachusetts, has just celebrated its one hundredth anniversary, having first come limply but limpid from the press on February 19, 1828 To this hale and hearty centenarian our congratulations are tendered With the passing of the anniversary the periodical embarks on a greater field of activity, including now in its representation the state societies of Vermont and New Hampshire as well as that of Massachusetts Additional mergers loom and will no doubt be consummated in the near future Thus the periodical well merits its new title, the *New England Journal of Medicine* Since its establishment the Boston journal has stood always for the highest ideals in medical ethics As a member of the Cooperative Bureau it has supported the standards set for the advertising of pharmaceutic and biologic preparations by the Council on Pharmacy and Chemistry of the American Medical Association Its editor, Dr Walter P Bowers, and his assistants, are animated by a desire for the best in scientific medical journalism The American medical profession can well sustain several weekly medical periodicals Each may be a stimulus to the others The time has passed when any medical periodical can long survive or gain the support of the American medical profession if it is devoted to policies that are reactionary, to commercial interests that are without regard for honesty, or to the personal ambitions of promoters The principles and ethics of medical journalism should be as sincere as those of medicine itself The *Boston Medical and Surgical Journal* has had a wonderful record for one hundred years—its future should be glorious

Association News

THE MINNEAPOLIS SESSION

The Scientific Exhibit

SPECIAL EXHIBIT ON MORBID ANATOMY

The Exhibit on Fresh Pathology, which has become an established feature in connection with the Annual Scientific Exhibit, will be under the direction of Dr Elexius T Bell professor of pathology and head of the department of pathology, University of Minnesota Medical School, Minneapolis The other members of the Committee on Fresh Pathology as announced by the local Committee on Scientific Exhibit are as follows Willard L Boyd, D V S, professor of veterinary medicine, University of Minnesota, Benjamin J Clawson, M D, professor of pathology University of Minnesota Medical School Clifford P Fitch D V M, professor of veterinary medicine, University of Minnesota, Kano Ikeda, M D, instructor of pathology, University of Minnesota Medical School, pathologist, St Luke s Hospital St Paul, James W Kernohan M B, instructor of pathology, University of Minnesota Graduate School of Medicine, Rochester, Minn, James S McCartney, M D, assistant professor, department of pathology, University of Minnesota Medical School Ralph G Mills, M D, professor of pathology, University of Minnesota Graduate School of Medicine, Rochester Minn, John F Noble M D, assistant professor of pathology, University of Minnesota Medical School pathologist, Ancker Hospital, St Paul, William A O Brien M D, assistant professor of pathology, University of Minnesota Medical School, pathologist university hospitals, Minneapolis Myron H Reynolds, D V M professor of veterinary medicine University of Minnesota, Harold E Robertson M D, professor of pathology, University of Minnesota Graduate School of Medicine, Rochester, Minn, Margaret Warwick, M D assistant professor of pathology, University of Minnesota Medical School, pathologist, Charles T Miller Hospital St Paul, Cecil J Watson, M D, instructor of pathology, University of Minnesota Medical School, pathologist, Minneapolis General Hospital, Minneapolis

Fresh pathologic material will be obtained daily from the hospitals in Minneapolis and St Paul, supplemented by material from the School of Veterinary Medicine of the University of Minnesota

SPECIAL EXHIBIT ON CLINICAL LABORATORY METHODS

The Committee on Scientific Exhibit of the Board of Trustees, on the recommendation of its advisory committee, has authorized a special exhibit or series of demonstrations of the most important newer clinical tests of a chemical nature, including the chemistry of the blood, digestion and urinary secretions It is planned to make the exhibit instructive for the general practitioner by stimulating demonstrations by competent biochemists The exhibit is being planned under the direction of Dr Victor C Myers, professor of biochemistry, Western Reserve Medical School, Cleveland

PERSONNEL OF COMMITTEE ON SECTION EXHIBIT, SECTION ON DISEASES OF CHILDREN

The Committee on Section Exhibit appointed by the officers of the Section on Diseases of Children is composed of the following Julius Hess M D, LeRoy S Palmer, Ph D, F W Schlutz, M D, Harry Steenbock, Ph D, and William Weston, M D The announcement of the scope of the exhibit appeared in this department, February 4

TIME LIMIT FOR APPLICATIONS FOR SECTION EXHIBITS

As has been announced previously, there will be three section exhibits in the Scientific Exhibit, namely, the exhibits under the auspices of the Section on Dermatology and Syphilology, the Section on Diseases of Children and the Section on Radiology Applications of participants in any of the section exhibits must be in the hands of the committee chairman by March 1 For the Section on Dermatology and Syphilology, address Dr Fred Weidman, Thirty-Sixth Street and Hamilton Walk, Philadelphia Pa , Section on Diseases of Children, Dr F W Schlutz, 121 Millard Hall, University of Minnesota, Minneapolis, Minn Section on Radiology Dr P M Hickey University Hospital, Ann Arbor Mich

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest such as relate to society activities new hospitals, education public health etc)

CALIFORNIA

Rabies Extends Northward—For several years rabies has been prevalent in southern California The occurrence of nearly fifty cases in dogs in Marin County since Nov 1 1927, marks its extension northward into territory where it has not been extensive for years The board of supervisors has taken steps to control the disease by enacting an ordinance which empowers county officials to destroy dogs that have not been vaccinated against rabies

Externship in Dermatology—An externship in dermatology and syphilology is open at Stanford University School of Medicine San Francisco for which an appointment will be made, August 1 for one year at a salary of $75 a month About thirty dermatologic cases are treated daily and about 300 syphilitic persons are seen weekly there are facilities for research Applications must be filed before June 1, stating age and educational qualifications

Another "College" President Gone Wrong— Dr" Carl J Weberg a Los Angeles chiropractor was held overnight in jail, recently, pending arrangements for bail on a possession of liquor charge it is reported The 'doctor is president of the Pasadena College of Chiropractic he formerly handled hose in the Pasadena Fire Department until suspended for insubordination In 1926 the Pasadena Health Department questioned his right to handle maternity cases as his petition to establish a maternity hospital had been refused

Appointments, Leaves of Absence and Resignation—At a meeting of the board of regents of the University of California in Los Angeles February 14 Chauncey D Leake Ph D , was appointed professor of pharmacology in the medical school, and Dr Alfred C Reed professor of tropical medicine in the George Williams Hooper Foundation for Medical Research The resignation of Dr Herbert S Thompson, assistant clinical professor of surgery in the medical school, was accepted Leaves of absence were granted to Dr Howard Morrow clinical professor of dermatology, from January 20 to May 20 Dr William G Moore, associate clinical professor of obstetrics and gynecology, from February 26 to June 1 and Dr Frank Hinman, clinical professor of urology from January 27 to May 9

County Societies and Real Estate—At least two county medical societies in California have purchased real estate with the object of providing for a permanent home The Los Angeles County Medical Association purchased a lot on a street that was transformed into a boulevard and thus was enormously increased in value The association then purchased a second lot a few blocks away for $80 000, and it is understood that the contract has already been let for a building The first lot has been leased to a corporation composed largely of physicians who will erect a medical office building *California and Western Medicine* estimates that the real estate purchased in the last seven years by the Los Angeles County Medical Association has a value now of about $380 000 The San Francisco County Medical Society has purchased an old mansion, the Irwin home, practically for the value of the lot, which is now the home of the society

Society News—Dr Nathaniel Austin Cary, Oakland, addressed the Alameda County Medical Society, recently, on Interesting Foot Lesions with Special Reference to Osteitis" ——Dr Charles D Ball, Santa Ana, the only remaining charter member, addressed the Orange County Medical Society, January 12, on "Incidents of the Past' , his son, Dr Dexter R Ball, was elected president of the society for 1928 following five years' service as secretary , Dr Danforth C Cowles, Fullerton, read a paper before the society on "A Review of 1927 "——A symposium on the thyroid gland was presented before the Riverside County Medical Society, recently, by Drs William W Roblee, Paul E Simonds, Paul F Thuresson and Charles R Geith ——Dr Oliver D Hamlin Oakland, addressed the San Joaquin County Medical Society January 5, on 'County Hospitals of the State of California" ——Dr Emanuel Friend, Chicago, addressed the Los Angeles County Medical Association February 16, on "Abnormalities of the Bowel Tract Their Blood Vessels and Their Surgical Significance "——The Southern California Public Health Association, Los Angeles, gave a banquet, January 13 in honor of Sir Arthur Newsholme former chief medical officer of the governing board of England and Wales Sir Arthur and Lady Newsholme are spending the winter at Santa Barbara ——Dr Wirt B Dakin addressed the Los Angeles Urological Society, February 7, on 'Renal Functional Tests"

COLORADO

The Bonfils Foundation—Mr Frederick G Bonfils, publisher of the Denver *Post* has set aside $500,000 to establish a foundation, which will offer $250 000 as a reward for a cure of tuberculosis and $250 000 as a reward for a cure of cancer The details as to what constitutes a cure and how it shall be established will be worked out with the cooperation of some of the best medical schools and hospitals Other plans in connection with the Bonfils Foundation will be published at the proper time

CONNECTICUT

Thirteen in One Family Had Smallpox—A somewhat unusual feature of the outbreak of smallpox in the vicinity of Cromwell Middletown and Chester was the occurrence of thirteen cases of the disease in one family, including the parents, seven sons, two daughters and two grandchildren

Personal—Lafayette B Mendel, Sc D , professor of physiologic chemistry Yale University New Haven addressed the Royal Canadian Institute, Toronto recently, on "Some Aspects of Animal Growth'——Miss Helen Chase, Waterbury, has given $10 000 to the Waterbury Mental Hygiene Clinic to supplement the work now being done——The president of Yale University announces the appointment of Treat B Johnson Ph D as Sterling professor of chemistry Dr Johnson who is known for research on the chemistry of bacteria has been a member of the Yale faculty since 1898 During the World War, he conducted investigations for the chemical warfare service and was director of a field laboratory at New Haven carrying on investigations in gas experimentation——Dr Alvin H Cranz has been appointed physician to the Connecticut State Prison at Wethersfield, succeeding Dr Percy B Battey resigned

DISTRICT OF COLUMBIA

Personal—Francis G Benedict Ph D director, nutrition laboratory, Carnegie Institution Washington gave an address recently at Mount Holyoke College South Hadley, Mass on "Heat Production of Man and Animals and Factors Affecting It"

Colonel Ashford Retires—After thirty years of distinguished service in the U S Army Medical Corps Col Bailey K Ashford was placed on the retired list, February 11 Colonel Ashford was born in Washington and graduated from Georgetown University Much of his service has been spent in Porto Rico, where he was president of the Porto Rico Anemia Commission which, between 1904 and 1910, treated about 300 000 persons for hookworm Colonel Ashford had previously demonstrated that the so called tropical anemia in Porto Rico was produced by a new species of hookworm known as *Necator americanus* He has done much work, also, on sprue In the World War he served with the first division, then as commander of the sanitary school at Langres and as corps surgeon to the seventh corps He has been awarded the Distinguished Service Medal

Bill to Regulate Practice of Healing Art—An attempt has been made by Senator Copeland to solve the difficulties in the District of Columbia which arise in connection with the regulation of drugless healing and the practice of medicine He has introduced a forty-three page bill which would set up a commission on licensure to practice in the district, consisting of the president of the board of commissioners, the U S Commissioner of Education the U S District Attorney the superintendent of schools and the health officer This body would establish minimum standards of education in the healing art and might establish minimum standards for hospitals for intern training It would appoint a board of examiners in the basic sciences, a board of examiners in medicine and osteopathy, a board of examiners in midwifery and such other boards in drugless healing as may seem necessary The commission would refer to the basic science board for examination in anatomy, physiology, chemistry bacteriology and pathology, applicants for licenses to practice the healing art There are pending in Congress now several bills which would create separate boards to regulate in the district the practice of medicine and the several cults If the Copeland bill becomes a law, there would be no occasion for the passage of any other measure

INDIANA

Death Rate Drops—The death rate in Indiana during 1927 decreased to 12.3 per thousand of population from 13.2 in the previous year The number of births also declined slightly There was a decrease in infant mortality to 59 per thousand from 73.4 Heart disease led the list of causes of death with cerebral hemorrhage second Accidental deaths generally increased those due to automobile accidents to 861 from 697 in 1926 There was a reduction in the death rates from tuberculosis, typhoid, scarlet fever, measles, pneumonia, nephritis, influenza and whooping cough

Federation of Labor Requests Medical Talks—The Fort Wayne Federation of Labor requested and was granted the cooperation of the Allen County Medical Society in giving a series of six educational lectures on health topics before the federation, to which the public is invited The purpose of the lectures is said to be a desire to inform the public of the need of well educated physicians and to give them a better idea of how to protect their health The first topic, which will be given February 27 is "A Physician's Education from the Beginning until He Starts in Practice', the second "Cancer,' and the third "The Value and Use of the Roentgen Ray in Medical Science'

Recalling the Old Days—The Hancock County Medical Society, Greenfield invited the wives of members and widows of deceased members to attend a dinner meeting, February 6 which was featured by discussions of the old days and an exhibition of instruments, books and supplies of a century ago The minutes of the first meeting of the society, Jan 6 1874 were on display There was a symposium on obstetrics one hundred years ago and now Dr Charles E McCord, Fortville, spoke on "The Old Timer', Dr Samuel W Hervey Fortville 'The New ' and Dr Jesse E Ferrell, Fortville, "Anesthetics in Obstetrics Dr Stewart Slocum gave a review Dr Charles H Bruner, Greenfield, was elected president for the ensuing year

Personal—Dr William H Meyer, formerly resident physician at the Williams Hospital, Lebanon, has been appointed acting assistant surgeon in the U S Public Health Service and assigned to duty at U S Marine Hospital number 2, Boston ——Albert Stump lecturer on medical jurisprudence Indiana University School of Medicine, addressed the Fountain-Warren County Medical Society at Veedersburg, February 6 on 'Medical Jurisprudence ——Dr George S Bond, Indianapolis, addressed the Cass County Medical Society Logansport, February 16, on The Heart"——Dr James O Parramore, Crown Point, represented the Indiana State Medical Association at the annual meeting of the Indiana Tuberculosis Association, Gary, February 15-16 Dr James H Stygall, Indianapolis, was elected president of the association for the coming year ——Dr Elmer C Singer has been appointed a member of the board of health of Fort Wayne to succeed Dr Raymond J Berghoff resigned

IOWA

Injunction Against "Herb Doctors"—Judge Hamilton granted an injunction January 13, against William Lovell and his partner "Dr" Barnett from practicing medicine in the state of Iowa following a two-day hearing The defendants, according to the Des Moines *Tribune* are herb doctors' The complaint against them was made by the state medical board

Personal—Dr Henry S Houghton recently appointed dean of the State University of Iowa College of Medicine visited Iowa City, January 21, following his arrival from China he assumed his administrative duties at the university medical school, February 1 ——Dr Daniel C Steelsmith Sibley has been appointed deputy state health commissioner and has moved to Des Moines succeeding Dr James Wallace resigned, and Dr Thomas E Powers has been appointed to succeed him

KANSAS

Society News—The Douglas County Medical Society at its annual meeting, recently gave a vote of thanks to Mrs J B Watkins, Lawrence for her offer to build and equip a modern hospital for that city Dr Harold P Kuhn, Kansas City Mo, addressed this meeting on Empyema"——At the January 12 meeting of the Marshall County Medical Society, Marysville Dr Harold H Woods read a paper on Gastric Ulcer," and Dr John W Randell That Pain in the Right Side of the Abdomen" A meeting on the same day by the Stafford County Medical Society, St John, was open to the public among others Dr John T Scott read a paper on 'The General Practitioner's Open Sesame' and Dr Friedrich W Tretbar on Birth Control'——The Golden Belt Medical Society the Shawnee County Medical Society and the Missouri Kansas Neuropsychiatric Society met jointly at the Menninger Sanatorium Topeka January 5 Among others Dr Peter T Bohan professor of medicine University of Kansas School of Medicine Kansas City spoke on Medical Economics, Dr Middleton L Perry superintendent of the state hospital Topeka, on Progress in Psychiatry and Dr Henry W F Woltman Mayo Clinic, Rochester Minn on 'Pain as a Symptom of Disease in the Nervous System

LOUISIANA

Society News—At a joint meeting of the Orleans Parish Medical Society and the New Orleans Gynecological and Obstetrical Society February 15 Dr Walter W Chipman Montreal, among others spoke on abdominal surgery for women and Dr John O Polak New York on toxic poisoning during pregnancy

Dairy School of Instruction—Aiming to assist in providing safe milk in Louisiana the state board of health and the New Orleans Board of Health sponsored a dairy school of instruction February 16-20 to which the public and milk producers were invited Special features included visits to the Wisconsin Dairy Special Demonstration Train to pasteurizing plants, abattoirs and to grade A dairies about New Orleans Among the speakers were W R Dodson dean college of agriculture, University of Louisiana Baton Rouge on Development of Dairying in Louisiana Fred R Zimmerman governor of Wisconsin Leslie C Frank sanitary engineer U S Public Health Service Dr William H Seemann of the Louisiana State Board of Health The Relation Milk Bears to Disease Dissemination', Edward P Flower D V M, secretary, live stock sanitary board Baton Rouge 'Live Stock Diseases and Their Control' George W Putnam Chicago City Health Department 'The Milk Control Problem in Chicago", Dr James C Anderson state health officer of Texas, Milk Control in Texas' Dr Charles C Bass, dean, Tulane University of Louisiana School of Medicine, New Orleans, and Dr Oscar Dowling, state health officer

MASSACHUSETTS

Personal—Dr Frank B Mallory was appointed professor of pathology at the Medical School of Harvard University Boston, February 1, and Dr Cornelius P Rhoads instructor in pathology

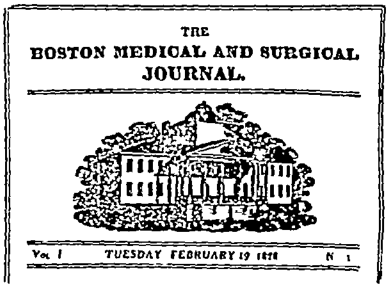
Tuberculosis Conference—About 200 persons attended a conference of the Massachusetts Tuberculosis League Boston February 6, among others, Dr Harry E Kleinschmidt of the National Tuberculosis Association, New York gave an address A film was exhibited on the technic of early diagnosis of tuberculosis which is to be exhibited to medical societies in other communities during March Dr Kendall Emerson, Worcester, president of the league, presided

Hospital News—The Massachusetts Women's Hospital dedicated a new wing containing twenty-three private rooms January 12, Governor Fuller attended the exercises, and Dr Henry T Hutchins gave the address——Dr Elliott C Cutler professor of surgery, Western Reserve University School of Medicine, Cleveland will address a staff meeting of the Massachusetts General Hospital, Boston, March 8, on "Experimental Production of Abscess of the Lung Physicians students and nurses are invited

Registrations Revoked and Suspended—At a meeting of the board of registration in medicine Boston January 26 the registration of Dr Christian A Nelson was revoked on the charge of gross misconduct in an alleged attempt to produce an abortion The registration of Dr Freeman W MacDonald was suspended for six months on the charge of gross misconduct, as shown by violation of the prohibition act The registration of Dr Richard H Houghton was suspended until further action of the board on the charge of gross misconduct and deceit, as shown by his sworn testimony in a court case

Society News—The Boston Orthopedic Club was addressed February 13, at the Boston Medical Library by Dr Nathaniel Allison among others on 'The Adaptive Changes in the Hip in Congenital Dislocation'——Dr John Lovett Morse, Boston, read a paper on 'The Thymus Obsession" at the one hundred and fourth meeting of the New England Pediatric Society, Boston, February 10——Dr George C Shattuck, Boston, addressed the Boston Health League February 15 on "Scenes in Tropical Africa"——Dr Frankwood E Williams New York, medical director National Committee for Mental Hygiene, addressed the Massachusetts Psychiatric Society, February 17, on The Future Equipment of Personnel in the Field of Mental Hygiene '

Centenary of Boston Medical and Surgical Journal—At a banquet in the Hotel Somerset Boston February 18, the centenary of the *Boston Medical and Surgical Journal* was duly commemorated The first issue appeared, February 19, 1828, the accompanying illustration is a facsimile of a portion of the cover showing the first Massachusetts General Hospital The president of the Massachusetts Medical Society, Dr John M Birnie, presided the toastmaster was Dr Homer Gage Worcester chairman of the committee in charge of the journal The speakers included Drs Joseph Garland Boston, Walter P Bowers, editor, Clinton, Frederick Cheever Shattuck Edward W Taylor and Robert M Green Boston David W Parker Manchester N H William G Ricker St Johnsbury Vt Alexander D Blackader editor of the *Canadian Medical Association Journal* and Morris Fishbein, who spoke on Medical Journalism and the Boston Medical and Surgical Journal With its next issue, the periodical will change its name to the *New England Journal of Medicine* including also the states of Vermont and New Hampshire in its representations Other guests at the centenary banquet were Drs George W Kosmak New York, Dennis E Sullivan Concord, N H secretary of the New Hampshire Medical Society Bertram Lewis Bryant, Bangor, Maine, secretary of the Maine Medical Association, and the various delegates and officials of the Massachusetts Medical Society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NEW JERSEY

Osteopaths Cannot Be School Physicians—The state commissioner of education has ruled that osteopaths cannot be appointed school medical inspectors in New Jersey by local boards of education because the law requires that a competent physician direct health work in the schools The commissioner has therefore set aside the appointment of an osteopath by the Hasbrouck Heights Board of Education

Society News—Dr David C Bull New York, addressed the Bergen County Medical Society on Trends in Modern Surgery '——Elmer H Brown D D S read a paper on 'Oral Diagnosis" before the Mercer County Medical Society, January 11——Dr William L Sneed New York, spoke before the Passaic County Medical Society January 12 on "Orthopedic Examination Care and Treatment of Early Childhood'——The Burlington County Medical Society has appointed a committee to arrange for the celebration of its centennial next year, Dr Reynold S Griffith, Philadelphia, addressed the society January 11 on 'Diagnosis of Organic Heart Conditions"——Dr Arthur A Landsman New York, addressed the North Hudson Physicians Association Jersey City January 30, on Significance of Bleeding from the Rectum"

Testimonial to Dr Morrison—The dinner given recently by the Medical Society of New Jersey at the Waldorf-Astoria New York was in acknowledgment of the services of Dr John Bennett Morrison to the society Dr Morrison secretary for several years has devoted a great deal of time to revivifying the old organization which, a speaker said, is the oldest medical society in the country (162 years) He, with other officers, has traveled many times over the state devoting an enormous amount of thought to organized medicine in New Jersey The toastmaster was Dr James J Hunter, Jr, Westville The speakers were Dr Lucius F Donohue chairman of the arrangements committee and ex-president of the state society, Dr James J Walsh, New York, Dr Henry O Reik, editor of the *Journal of the Medical Society of New Jersey* and executive secretary of the society, Dr Walter P Conaway, president, Dr Edward J Ill and Dr Morrison

NEW MEXICO

Personal—Dr Guy W Luckey, health officer in Bernalillo County and Albuquerque has resigned to become health officer of Boone County, W Va, succeeding Dr William H Enneis, formerly health officer of Union and Eddy counties It is reported that Dr Enneis has accepted an appointment at Knoxville, Tenn Dr James R Scott, now in Berkeley Calif, will return to his old position as health officer of Bernalillo County about April 1

Malaria in Doña Ana County—An outbreak of malaria amounting to 351 cases reported to the state health department occurred in Doña Ana County during 1927, which was an increase of 1 300 per cent over 1926, in 1926 there was an increase of 450 per cent over 1925 The county health officer Dr Charles W Gerber, says in his annual report that prior to 1925 few, if any, cases of malaria occurred in the county About fifty years ago, malaria was prevalent over a period of about five years Malaria-carrying mosquitoes probably have always been present in the county, but in later years the drainage canals and the few undrained surface areas have made ideal places for the breeding of mosquitoes The malaria infested area is growing, cases appearing in scattered areas as far south as Mesquite The heaviest infestation last year was in the Doña Ana Hill and West Picacho districts Later in the season, the Rincon Valley reported cases from Hatch to Garfield This was a severe form, while the variety found in the Mesilla Valley was the benign tertian type The health officer recommends a plan to eradicate the malaria mosquito in this region, combining the use of top minnows and of larvicide, and the preventive and curative use of quinine The state board of health will borrow $2,500 with which to inaugurate an antimalaria campaign The estimated loss due to the presence of malaria from the cases that were reported last year was nearly $14,000

NEW YORK

No Diphtheria Death in Almost Four Years—The death of a 6 year old child, January 9 broke the exceptional record of the city of Auburn, which has not had any deaths from diphtheria since March 9, 1924 This child according to *Health News* had not been immunized against diphtheria, a physician was not called early in the disease, and antitoxin was not given until two days after his first call

Society News—Dr John A Kolmer, professor of pathology and bacteriology, University of Pennsylvania Graduate School of Medicine, Philadelphia, addressed the section of pathology of the Buffalo Academy of Medicine, February 22, on 'Chemotherapy of Bacterial Infections', Dr William A Evans, Chicago, will address a public meeting under the auspices of the academy, February 29, in the Hutchinson High School on Achievements in Medicine in the Past Half Century'

Typhoid Victim Claims Damages—The father of a girl, who, it is alleged, contracted typhoid in Cohoes last October, filed a claim of $5,000 for damages and $1,000 for the expense of the illness and the loss of his daughter's services The girl is alleged to have contracted typhoid from drinking water from the city main in her home There were said to be about forty-eight cases of typhoid reported in the same general vicinity which were supposed to have arisen from a cross connection permitting polluted water from a canal to enter into the city main at an industrial plant

New York City

Personal—Dr Bruno S Harwood has resigned from the city health department after twenty-four years service, effective, April 10, and Dr William C Buntin will take over his office temporarily A testimonial dinner was given to Dr Harwood February 6

Dr Penfield Goes to Montreal—The *New York Medical Week* notes that after seven years service as assistant professor of surgery at Columbia University College of Physicians and Surgeons, and also as neurologic surgeon at the

Presbyterian Hospital, Dr Wilder G Penfield will leave, March 1 to become professor of neurologic surgery at McGill University Faculty of Medicine, Montreal

Society News—The Medical Society of the County of New York will hold a symposium on nephritis February 27 the speakers will be Drs George Baehr Nellis B Foster, William W Herrick, Henry G Bugbee, Ben W Key, John D Lyttle, Walter L Niles and I Ogden Woodruff ——Dr Jacques Forestier, Paris, addressed the Kings County Medical Society February 21, on "Iodized Oil Injections as Aids in Diagnosis'

Hospital News—Stony Wold Sanatorium is endeavoring to raise $250,000 for a new wing, among the speakers at the opening dinner, January 23, were George E Vincent, Ph D, president of the Rockefeller Foundation, and Dr Linsly R Williams of the National Tuberculosis Association ——The name of the Brooklyn Cancer Research Hospital has been changed to the Trinity Hospital ——Mount Sinai Hospital has opened its new $2 000,000 school and residence for nurses which will accommodate 490 nurses, it contains an infirmary of twelve beds and special suites on two floors for the faculty ——The Jewish Memorial Hospital has purchased a site at Broadway and One Hundred and Ninety-Sixth Street where a 200 bed hospital and nurses' home will be erected

One Million Leaflets and 200 Talks on Measles—Anticipating a biennial measles epidemic, the department of health, department of education, Metropolitan Life Insurance Company and New York Tuberculosis and Health Association, jointly, will conduct an educational campaign in which a million leaflets, describing the early symptoms of measles and urging prompt medical attention, will be addressed to parents and 200 talks by physicians given to school children and to parents There will be twenty radio talks and a special leaflet sent to physicians, special service in measles cases by nurses, cooperation with the baby departments of a number of department stores, and publicity in newspapers The campaign, the announcement notes, is to be similar to that carried out in Syracuse two years ago, which is said to have resulted in a reduction of 60 per cent in the mortality rate there in an epidemic year

What Ambulance Surgeons Do—According to the Hospital Information Service Bureau of the United Hospital Fund, an ambulance goes dodging through traffic in New York City every three and a half minutes each day of the year The number of unnecessary calls for an ambulance in a year was 5,462 they are made by persons unable to estimate the extent of an injury and for accidents which do not require the attention of a physician Aside from rendering service to the sick and injured, ambulance surgeons obtain an unusual experience in emergency work, as is shown in the tabulation of a year's ambulance calls

Injuries

Abdominal injuries	701
Asphyxiation	306
Bullet wounds,	624
Burns or scalds	1 324
Electrical burns,	70
Heat prostrations	679
Hernia	592
Lacerations	20 545
Gas poisonings	1 832
Cerebral concussions	1 026
Contusions	14 830
Dislocations	
Upper extremity	757
Lower extremity	574
Dog bites	802
Fractures	
Skull	2 088
Upper extremity,	3 520
Lower extremity,	4 154
Shocks	938
Sprains	1 942
Wounds	1 255
Unclassified	7 300

Diseases

Alcoholism acute	8 102
Delirium tremens	472
Coma	760
Convulsions	888
Diseases of the chest,	1 951
heart,	3 963
Intestine	4 931
Kidneys	1 327
Genito urinary	1,203
Erysipelas	586
Epistaxis,	529
Acute hemorrhages	817
Hemorrhage of lungs	286
Stomach,	322
Cerebral	1 198
Hysteria	1 976
Insanity	5 947
Infections,	2 808
Labor	4 416
Pneumonia,	4 338
Pulmonary tuberculosis	1 331
Unclassified	22 694

NORTH CAROLINA

Life Extension Unit Formed—The state board of health, with the cooperation of the International Health Board of the Rockefeller Foundation has formed a life extension unit and placed Dr Frederick R. Taylor, High Point, in charge to promote health work by physicians If desired, the unit will assist in the development of the technic of periodic health examinations by examining physicians, dentists and members of their families The new unit will not in any way compete with physicians in periodic health examination work but will attempt to promote the idea among the public

Hospital News—The Haywood County Hospital, Waynesville, said to be the first general hospital in the state supported by county funds, was opened recently It is a three story $100 000 structure with a capacity of forty beds an outpatient department private rooms, wards, solariums and equipment of the most modern type Various organizations have furnished rooms At the opening exercises the speakers were Dr John T Burrus, High Point, president of the Medical Society of the State of North Carolina, and Dr Watson S Rankin, Charlotte formerly secretary of the state board of health

Institute on Parental Education—George E Vincent Ph D, president Rockefeller Foundation New York delivered his first speech in North Carolina February 14, before the North Carolina Institute on Parental Education, Raleigh on 'Children Versus Parents' The institute, the first of its kind in the state gave an opportunity to parents and teachers to obtain scientific material which might be helpful in meeting child problems Much of the program was devoted to the health of the child among other speakers were Drs Wilburt C Davison dean Duke University School of Medicine, Durham, Charles O H Laughinghouse Raleigh secretary, state board of health John T Burrus High Point, president state medical society and George W Kutscher, Jr, Black Mountain Governor McLean presided at some of the sessions

OHIO

Survey of Atmospheric Dust—The weather forecaster at Cincinnati received information, January 27, to the effect that the U S Weather Bureau in cooperation with the American Society of Heating and Ventilation Engineers will conduct a survey of the dust content of the atmosphere in selected cities and that special instruments would soon be shipped to Cincinnati for that purpose as well as instructions and forms on which to record the measurements and forward them to Washington According to the Cincinnati *Enquirer,* this investigation was undertaken as the result of inquiries from all parts of the country following publication of a news item in THE JOURNAL, January 7, on Dust in Air of Cities"

Society News—Twenty-four members of the Travelers' Club of the Lima Academy of Medicine went to the University of Montreal February 11, on "their fifth annual tour" to attend clinics ——Dr Henry J Gerstenberger, Western Reserve University School of Medicine Cleveland addressed the Summit County Medical Society, Akron February 7 on Studies in Rickets and Spasmophilia"——The Logan County Medical Society Bellefontaine was addressed February 3 on 'The Treatment of Syphilis The speakers were Drs Clyde K Startzman, Bellefontaine, Robert B Pratt Bellefontaine, Alfred E Jones Belle Center, Clarence N Miles D D S, Samuel L Zurmehly Rushsylvania Frank R Makemson, Bellefontaine Van F Barrett, Lakeview and Arthur J McCracken, Bellefontaine

Personal—Dr Charles O Probst tendered his resignation January 14, as medical director of the Columbus Tuberculosis Society after twenty-one years of service ——Dr Andre Crotti has been elected chief of staff of White Cross Hospital Columbus, for the ensuing year ——Dr Julius Shamansky has been appointed health commissioner of Mount Vernon to succeed Dr Irvin S Workman resigned ——Drs Marion A Blankenhorn and Roy W Scott have been promoted from associate professors of medicine to professors at Western Reserve University School of Medicine, Cleveland ——Dr William D Inglis has been elected president of the board of health of Columbus succeeding Dr Wells Teachnor whose term expired ——Dr Wilbur G Carlisle has been named city health commissioner of Bucyrus to succeed the late Dr Arthur H McCrory, who held the position for many years ——A dinner was given recently by physicians at the University Club Cincinnati, in appreciation of the long service to the community of Dr Thomas V Fitzpatrick, who was presented with a traveling bag ——Dr Frank Warner was guest of honor at a testimonial dinner February 8, given by the staff of White Cross Hospital, Columbus, in recognition of his thirty-five years of service for the hospital

PENNSYLVANIA

Society News—At a meeting of the Allegheny County Medical Society, Pittsburgh, February 21, Drs Albert A Bornscheuer read a paper on "Progress in Plastic Surgery', Thomas W Grayson "Dietetics, Voigt Mooney, "Painful Backs—Some Anatomic Causes with Also the Development and Symptomatology of Ostearthritis of the Spine" and Curtis S Foster, "Ureteral Strictures"——Dr Joseph V Klauder associate professor of dermatology and syphilology, University of Pennsylvania Graduate School of Medicine, addressed the Berks County Medical Society, February 14, on "Some of the Commoner Aspects of Skin Diseases and Their Relation to the General Practitioner", the March meeting of the society will be addressed by Dr Frederick M McPhedran, Philadelphia, on early diagnosis of tuberculosis ——Dr Edward L Bauer, professor of pediatrics, Jefferson Medical College, and president of the Philadelphia Pediatric Society, addressed the Northampton County Medical Society, Easton, February 17 on "Latest Aspects of Scarlet Fever, Its Prevention and Treatment'——Dr William Lintz, New York held a clinic at the hospital at Scranton and addressed the Lackawanna County Medical Society, February 23, on The High Blood Pressure Problem"

Philadelphia

Personal—Richard A F Penrose, Jr, Ph D, has resigned from the board of trustees of the University of Pennsylvania ——Dr George E de Schweinitz, formerly President of the American Medical Association, addressed the Undergraduate Medical Association of the University of Pennsylvania January 20, on "Remarks Concerning the Medical Student's Relation to His Work"

Resolution About Removing Tonsils—Following a recent discussion of the 'tonsil problem of the aged" at a meeting of the Philadelphia Laryngological Society, "sensational notoriety" is said to have been given to a method of removing tonsils by electrocoagulation or desiccation which was advocated by a member during the discussion The society has since passed a resolution stating that it does not officially endorse the method nor approve the publicity given the matter, and that it disclaims all responsibility for opinions expressed in the discussion on removal of tonsils by this method

Society News—Dr William G Shemeley Jr, addressed the Philadelphia Laryngological Society February 8, on 'Basilar Skull Fracture Involving the Left Temporal Bone" and Dr William Hersey Thomas addressed the Philadelphia Clinical Association on "Obstructive Uropathy'——Among others, Drs Walter E Lee Louis H Clerf and Gabriel Tucker gave a moving picture demonstration of postoperative massive atelectasis of the lung before the joint meeting of the New York Surgical Society and the Philadelphia Academy of Surgery, February 8 Drs Charles H Frazier spoke on 'Bilateral Operations for Pituitary Lesions" and John B Deaver on 'Closure of Prostate Bed Following Prostatectomy '——Dr John F Sinclair addressed the Philadelphia Pediatric Society, February 14, on 'Massive Atelectasis Accompanying Acute Suppurative Bronchitis ——Prof Henry F Osborn Ph D New York, addressed the medical history section of the Philadelphia College of Physicians February 21 on Recent Discoveries Concerning the Ancestry of Man,' and Dr Charles N B Camac, New York, on 'The Edwin A Smith Papyrus"

VIRGINIA

Bill Introduced—Senate bill 173 provides for the repeal of the law allowing the licensing of practitioners of poropathy

Personal—Dr Joseph H Hiden, Pungoteague was awarded the first prize offered through *Southern Medicine and Surgery* for the best paper on "How the Family Doctor Can Increase His Usefulness and His Income ' The contest was open to any reputable physician in Virginia or the Carolinas and forty-two essays were submitted——Dr James M Habel Jetersville, rescued three children and an aged woman, recently, from a burning house while the owner and his wife were at church——The February *Virginia Medical Monthly* notes the names of seventeen physicians in Virginia who are members of boards of directors of Virginia banks

GENERAL

Grants to Aid Research on Clinical Medicine—The Committee on Scientific Research of the American Medical Association invites applications for grants in aid of research on problems bearing on clinical medicine Inquiries may be addressed to the committee, 535 North Dearborn Street, Chicago

Another Four Weeks of Automobile Accidents—In the four weeks ending January 28 in seventy-six large cities of the United States, automobile accidents were responsible for 528 deaths, as compared with 469 during the corresponding period of last year Eight cities reported no deaths from automobile accidents in the last four weeks, while fourteen cities reported no deaths during the corresponding period last year

Professor Bauer of Vienna to Lecture—Dr Julius Bauer, professor of medicine University of Vienna, and physician in chief to the Polyclinic, will deliver several lectures and also the convocation oration before the American College of Physicians at the meeting in New Orleans, from March 5 to 9 Professor Bauer's most noteworthy contributions to medical literature are his lectures on "Constitution and Inheritance for Students and Physicians," his book on "The Constitutional Disposition of Internal Disease," and his latest work on "Internal Secretions"

Offer of Large Prize for Cancer Cure Extended—The managing director of the American Society for the Control of Cancer, George A Soper Ph D, announced February 2 that the offer of $100 000 for the discovery of methods for the prevention and cure of cancer by William Lawrence Saunders which expired will be extended until Feb 1, 1929, or longer, following the suggestion of Mr Saunders The 3 158 applications received and those still coming in will be submitted to a reference board of five authorities on cancer who will study them for possible leads to new methods of attack on cancer Many of the letters were from persons who had no scientific training, and none of the applications have revealed any process that warrants giving up the methods of treatment now recognized by the medical profession Dr Soper pointed out that the society will not only investigate new methods suggested but will also inform the public of the worthlessness of some popular remedies

***The Meat Situation.**—There was a decline of 3½ pounds in the per capita consumption of meats in 1927, in the United States, according to the department of agriculture The total production of meat in the United States declined 373 000,000 pounds during the year This, it is said, was entirely the result of the restricted supply of beef, notwithstanding an increase of 352 000,000 pounds in the pork supply The exports of meat fell off but the imports of meat into the United States which are, as a rule, only a drop in the bucket compared to the total supply, have increased in the last two years, amounting in 1927 to less than 1 pound per head of population The beef cattle situation presents the anomalous condition of a constantly dwindling herd supply each year Slaughter figures show a gradual rise from 1921 to the high record of 7,458,000 000 pounds in 1926, while in this period the total number of beef cattle in the country diminished almost 10 000 000 Such a paradox, the report notes, cannot continue for instead of getting our beef from the natural increase of the herd, we are consuming the herd itself The production and consumption of veal in 1927 followed a similar trend to that of beef although less pronounced There has been a slight increase each year in the production totals of lamb and mutton since 1922 Pork production swung upward in 1927 after a moderate decline in the two previous years from the high peak of production in 1924 The per capita consumption in this country in 1927 of pork, exclusive of lard, was 68 5 pounds of lamb and mutton, 5 4 pounds, of veal, 7 4, and of beef, 58 a total meat consumption of 139 3 pounds The per capita consumption of lard was 13 8 pounds

Dr Coolidge Announces 900,000 Volt Tube—William D Coolidge Ph D of the General Electric Company announced, February 15 on the occasion of the presentation to him of the Edison Medal the production of a triple-cascade cathode ray tube operating on 900 000 volts and capable of sending out into the air a stream of electrons with a velocity of 175 000 miles per second The result was made possible by the cascade arrangement whereby rays from one tube are fed into another which speeds them up and feeds them along to still another The new tube is about 95 inches long and has three bulbs each 12 inches in diameter A heated tungsten filament originally used by Dr Coolidge in his roentgen-ray tubes, furnishes the supply of electrons "This cascade or multisectional system,' Dr Coolidge said, "promises to let us build vacuum discharge tubes for as high voltages as we can produce This applies as well to an x-ray tube as to a cathode-ray tube, as the latter may be converted into the former by the addition of a suitable target This opens a vista of alluring scientific possibilities, According to Sir Ernest Rutherford, we need only a little more than twice the voltage which we have already employed to produce x-rays as penetrating as the most penetrating gamma rays from radium and 3,000,000 volts to produce as high speed beta rays We expect to find that a high voltage positive ray tube can be constructed along the general lines of the multisectional cathode ray tube, in which case according to Rutherford, about 8 000,000 volts would be needed to produce positive rays having the energy of the highest velocity alpha rays from radium" Just what the use will be for these high speed particles obtained from the new tube is still a problem, Dr Coolidge says 'We will experiment with them It is not unlikely that therapeutic, chemical, bactericidal and other practical uses will develop"

Effort to Improve Health of Children—The Commonwealth Fund, New York expended $1,100 000 last year to improve the health of American children, and made gifts to hospitals and welfare work which brought the total appropriation to $1,953,557 Demonstrations in child health are being conducted in Rutherford County, Tennessee, Athens Ga, Marion County, Oregon, and a five-year demonstration at Fargo N D, was completed The program for the development of child guidance clinics, visiting teacher work in the public schools and projects in mental hygiene required $697 000 This five year period of demonstrations and consultant service has resulted in establishing clinics for children's behavior problems in Cleveland, Philadelphia, St Louis, St Paul, Minneapolis, Dallas, Baltimore Richmond, Milwaukee, Los Angeles and Pasadena The fund aided in establishing in New York last year an institute for child guidance fully equipped for research and practical work, and providing training for psychiatrists, psychologists and psychiatric social workers The fund is administering fellowships for British graduate students in American universities and for the maintenance of these fellowships last year $175,000 was appropriated The fund appropriated $414 000 for the development of rural hospitals during the year, making awards to Farmington, Maine, Beloit Kans and Wauseon Ohio Miscellaneous grants, totaling $182,000, were made to various organizations, including the American Society for the Control of Cancer, the American Conference on Hospital Service, the New York Tuberculosis Association, the Welfare Council of New York City and other health and welfare agencies The Commonwealth Fund was established in 1918 as a general philanthropic foundation with an initial gift of $10,000,000 from the late Mrs Stephen V Harkness This was increased during her lifetime by other donations The capital endowment now amounts to $38,000,000 The income of the fund last year was $2,129,748

LATIN AMERICA

Lectures at School of Tropical Medicine—William H Taliaferro, Ph D, professor of parasitology, University of Chicago, arrived in San Juan, P R, January 9, to be the guest of the University of Porto Rico until April 1 He will give a course in protozoology at the school of tropical medicine and carry on immunologic studies in parasitic diseases During January, Oscar Riddle Ph D, of the Carnegie Station for Experimental Evolution, Cold Spring Harbor, N Y, gave six lectures at the school of tropical medicine, San Juan, on "Internal Secretion in Evolution and Reproduction' and "Control and Transformation of Sex in Animals"——Dr F W O Connor, assitant director, division of medical education, Rockefeller Foundation, recently gave a series of lectures at the School of Tropical Medicine at San Juan, P R, on filariasis and amebic dysentery

Meeting in Memory of Dr Carlos John Finlay—In connection with the sixth International American Conference, Havana, Cuba, February 17, exercises in honor of the late Dr Carlos John Finlay were held in the building of the Secretaria de Sanidad y Beneficencia Dr Ray Lyman Wilbur, president of Stanford University, formerly President of the American Medical Association, and a member of the United States delegation to the conference, gave an address He said that the knowledge of the transmission of yellow fever through the mosquito which was first suggested by Dr Finlay, together with that on the control of malaria plague, cholera, typhoid and smallpox, has done more to mold the future of our race in this hemisphere than any other one thing, and that Dr Finlay was one of those pioneers who see a way through the tangle of the known and unknown by the use of careful, thorough observation He had what Pasteur called the 'prepared mind' or he would not have been one whose work mapped the way for others to build the safe highway of today with the experimental work carried on in the neighborhood of Camp Columbia by Reed Carroll Lazear and Agramonte Dr Finlay was born in Cuba in 1833, the son of a physician, he practiced in Havana and was a delegate from Cuba to the International Sanitary Conference in Washington, 1881, in which year he promulgated the theory that yellow fever was conveyed from man to man by mosquitoes, after the withdrawal of the United States troops from Cuba in 1902, he succeeded Gorgas as chief health officer of Cuba He was a thoughtful and kindly enthusiast Having seen his theory established, Dr Finlay lived modestly without further thought of recognition and died in 1915

Government Services

Officers Retired and Ordered Up

Majors Lloyd E Tefft, Jirah M Downs, Allen J Black and Edmund W Bayley, having been found by a retiring board incapacitated for active service on account of disability incident thereto and such findings having been approved by the president, their retirements under the provisions of section 1251 revised statutes, are announced——Capt Harry Wall has been ordered to report to the president of the army retiring board, Washington, D C——Capt John H Trinder has been ordered to report to a retiring board at Chicago for examination——Major Charles L Banks will report for examination to an army retiring board at the Presidio, San Francisco

Navy Personals

Comdr Ralph T Orvis, who will complete thirty years service June 10 has applied for retirement——Lieut Comdr Page O Northington has tendered his resignation from the service——The following officers have been ordered in attendance on a course of instruction in internal medicine at the Massachusetts General Hospital beginning March 1 Capt Robert E Hoyt, Comdr Renier J Straeten, Lieut Comdrs William W Wickersham William W Hargrave and Stephen R Mills, and Lieut Clyde W Brunson——Lieut Comdr Fenimore S Johnson and Lieut James E Root Jr have been ordered in attendance on a course of instruction at the New York Post-Graduate Medical School and Hospital for a period of one and three months respectively——Lieut Norman J Haverly has been found qualified for promotion to the rank of lieutenant commander

Foreign Duty Personals

Major Herbert C Neblett will sail for New York about May 16 to the Philippine Islands for duty——The following officers will sail for the Philippines about June 8 Major John Dibble Capt Charles A Stammel, and Lieuts Mack M Green, Verner E Ruedy, William E Shambora and Arthur B Welsh——Lieut Cecil W Dingman will sail from San Francisco about June 9 for duty in the Hawaiian Department——Capt Ray H Skaggs will sail from New York about June 2 for Porto Rico for duty——Lieut Bennie A Moxness will sail from San Francisco about June 6 for duty in the Canal Zone——Capt James H Blackwell has been relieved from assignment at San Juan P R, on completion of his tour and assigned to the medical field service school, Carlisle Barracks Pennsylvania——Major John W Sherwood will sail from New York about June 2 for the Canal Zone for duty

U S Public Health Service

Special Consultant Jay F Schamberg, Philadelphia, was directed January 14 to proceed to Hot Springs Ark, and return in connection with venereal disease control measures——Surg Norman Roberts has been relieved from duty at Washington, D C, and assigned to Ellis Island, New York——Asst Surg Franklin J Halpin has been assigned to duty with the U S Employees Compensation Commission Washington, D C——Surg Allan J McLaughlin was directed to proceed from St Louis to Chester, Ill and return in connection with an investigation of a case of alleged leprosy——Asst Surg Alfred J Aselmeyer has been relieved from duty at Naples Italy and assigned to Warsaw, Poland, Asst Surg Jacob P Eberhardt goes from Savannah, Ga, to marine hospital number 6, Cleveland and Asst Surg Homer L Skinner from Ellis Island, N Y, to Savannah, Ga——Dr Maurice A Roe has been commissioned in the class of assistant surgeon effective the date of oath——Acting Asst Surg Louis E McCann has been relieved from duty at Washington, D C, and assigned to the U S Bureau of Mines Clinic, Picher, Okla——Asst Surg John R Murdock has been relieved from duty at Seattle Wash and assigned to marine hospital number 9, Fort Stanton N M——Surg George W McCoy has been directed to proceed to Honolulu in connection with studies of leprosy——Asst Surg Ernest E Huber has been assigned to duty at the hygienic laboratory, Washington D C, effective, January 16——Asst Surg L R White has been assigned to duty at marine hospital number 7 of New York——Asst Surg Albert S Irving has been assigned to duty at Washington D C, with the U S Coast Guard

Foreign Letters

LONDON

(From Our Regular Correspondent)

Jan. 28, 1928.

The Lowest Birth Rate on Record

The vital statistics for 1927, which have just been published, show once again the lowest birth rate on record. The birth rate for England and Wales is 1.1 per thousand below that of 1926, the lowest rate recorded since the establishment of civil registration. The death rate is 0.7 per thousand above that of 1926, the excess being due to the high mortality of the first and fourth quarters of the year. The infantile mortality rate for England and Wales is equal to that of 1923, the lowest on record, the rate in 1926 was 70 per thousand births. The decline in the birth rate is shown in the following table:

Birth Rates per Thousand of Population

1917	17.8	1923	19.7
1918	17.7	1924	18.8
1919	18.5	1925	18.3
1920	25.5	1926	17.8
1921	22.4	1927	16.7
1922	20.4		

It will be seen that the war figures are now considerably higher than the peace time figures. The following figures show how the reduction in the death rate has been maintained:

Death Rates per Thousand of Population

1917	14.2*	1923	11.6
1918	17.3*	1924	12.2
1919	14.0*	1925	12.2
1920	12.4*	1926	11.6
1921	12.1	1927	12.3
1922	12.8		

* Civilians only.

The following table shows the remarkable fall in the infant death rate which has taken place since the beginning of the present century:

Deaths of Infants Under One Year per Thousand Births

1896	148	1912	95
1897	156	1913	108
1898	160	1914	105
1899	163	1915	110
1900	154	1916	91
1901	151	1917	96
1902	133	1918	97
1903	132	1919	89
1904	145	1920	80
1905	128	1921	83
1906	132	1922	77
1907	118	1923	69
1908	120	1924	75
1909	109	1925	75
1910	105	1926	70
1911	130	1927	69

Cremation in Great Britain

The secretary of the Cremation Society of England has issued a statement concerning the progress of cremation in Great Britain. Although this form of burial is not gaining ground so rapidly in this country as in Czechoslovakia, Switzerland or Germany (where no less than eighty-one crematoriums are now in operation and the annual number of cremations is approximately 45,000), the figures for Great Britain indicate that this method of disposal of the dead is steadily becoming more general. As the metropolitan burial grounds are becoming exhausted and fresh ground for burial purposes is difficult if not impossible, to acquire, a much more rapid increase may be looked for in the near future. The provision of crematoriums is being considered by the local authorities in all parts of the country and establishments have been authorized by several. The number of cremations in Great Britain has increased from 1,986 in 1923 to 3,266 in 1927.

The Saints of Medicine

To a large and distinguished company who attended a reception at the Royal Society of Medicine, Dr. Jane Walker delivered an address on "Saints, Medicine and Surgery." She said that St. Luke had always been regarded as the patron saint of physicians. But she feared that as a physician St. Luke was now discredited. His gospel had been most carefully examined from the medical point of view and was declared to show no signs of any special medical skill or knowledge. It was, however, rather like a physician, she admitted, not to mention the fact that the poor woman who was miraculously healed had spent all her money on physicians and was nothing the better for it—a fact duly recorded in the other two synoptic gospels. Two other patron saints of the medical profession were St. Cosmo and St. Damian, who figure in the new coat of arms of the Royal Society of Medicine. In choosing them as supporters of the coat of arms the society had formed a link with the past, for these two saints were the patrons of the ancient guild of barber surgeons, and effigies of them are found on the exquisite silver-gilt instrument case of this guild. Tradition, according to Dr. Walker, had credited different saints with the power of healing almost every disease known to the Middle Ages, from pestilence to toothache. The faith with which their powers were regarded was shown by the practice still extant of hanging ex-votos on their images and pictures in churches. Among the exhibits on view illustrating the subject of the lecture, was a collection of ex-voto offerings lent by the Wellcome Historical and Medical Museum.

The Hunter Bicentenary

The bicentenary of the birth of John Hunter, anatomist, comparative anatomist, physiologist and founder of scientific surgery in England, will be celebrated, February 14. A year ago the president of the Royal College of Surgeons, Sir Berkeley Moynihan, paid a tribute to Lister, whose centenary it was, and in bracketing the two names Hunter and Lister he said that they stood apart from all other men by reason of the innumerable gifts which they had conferred on mankind. This year the Hunterian Oration will be delivered by Sir Holbert J. Waring, surgeon to and joint lecturer in surgery at St. Bartholomew's Hospital. In the evening the festival dinner of the Hunterian Society will be held. The bicentenary celebrations also include a reception at the Royal College of Surgeons, February 16, followed by the Thomas Vicary lecture on 'The Homes of Hunter' by Mr. G. C. Peachey. During the commemoration week there will be a special display of hunterian specimens at the college arranged by Sir Arthur Keith, and a number of hunterian relics will also be shown by Mr. Plarr, the librarian. Wreaths will be placed by representatives of the surgical and medical professional bodies on Hunter's tomb in Westminster Abbey.

Law and Medicine

At the annual dinner of the Medico-Legal Society, Mr. Justice McCardie, in submitting the toast "The Medico Legal Society," said it would be deplorable if there should be in the future any antagonism of feeling between law and medicine. There were two things that, he felt, might lead to an antagonism of feeling. One was the question of insanity, which had created acuteness of controversy in many quarters (The Journal, Jan. 7, 127, p. 42). He did not believe in a law which was unprogressive. He did not think that the social and the scientific philosophy of 1927 was the same as the social and scientific philosophy of 1843 When such a subject as insanity was discussed, certain broad features were sometimes overlooked Insanity was always treated by writers in the press from the point of view of murder He had never seen it discussed from any other aspect But it touched questions of theft, forgery and assault, and there was in the question of insanity a far broader matter than was considered by many people who wrote about it The other matter related to medical secrecy There were two aspects of the question, each of which was vital There was the physician who said, 'Health, health, health, and break down the legal obstacles that prevent the gain of health" Yes, but there was another point of view—and there was not a lawyer whose heart was not stirred—and that was Truth, truth, truth, open the shutters and let in the full light of truth" Truth lay at the root of criminal justice

Physician's Motorcar Not an "Ambulance"

A physician was summed at Highgate police court for driving his motorcar at 35 miles an hour He pleaded that he should be excused for his speed, as ambulances were excused, because he was called out to an urgent case The patient wrote to the court that he was in great pain after an operation, and could obtain but little sleep without the help of drugs He asked his wife to call the physician to attend as quickly as possible The physician was fined $15

Local Patients Kept Out of Hospitals by Motoring Victims

The number of motor accidents has become so great as to constitute a special problem for hospitals Mr J C Buchanan, secretary of the British Hospitals Association said in the press that the question of the effect of the growth of motoring on the finances of hospitals has been engaging the attention of the British Hospitals Association for the last few months Hospitals throughout the country are overcrowded with injured patients from other parts In many cases patients are unable to secure beds in the hospital which their district supports because they are full up with people from other places We are considering the question of securing an amendment of the law to enable voluntary hospitals to include, in their expenses, statements of claims arising from motoring accidents"

Clinics for Rheumatism

The importance of rheumatism as a cause of disability, and a scheme by which it can be arrested in its early stages by special clinics near the homes and factories of the workers, were dealt with at a meeting held under the auspices of the British Red Cross Society A sum of $250,000 is required in London to establish the first special clinic Here it is proposed to treat chronic rheumatism by radiation, ultraviolet rays and electric treatment, in addition to baths and massage Sir William Willcox said that the ministry of health had established the fact that one sixth of the total absence through sickness of industrial workers was due to rheumatic diseases It was the common experience that every one suffered in some way from rheumatism and it was now established that the disease was due to germ infection The resistance of the patient had its effect on the incidence of the disease, and good food in sufficient quantity and a properly balanced diet sunlight fresh air and good housing all had their effect The treatment of rheumatism was therefore, a very big problem By means of these clinics it would be possible to examine further the causes of rheumatism and set the treatment on a proper basis A large number of these rheumatic patients would get well very quickly under proper treatment The experience of Germany and the continent showed that the waste from sickness was considerably cut down by early attention to the disease With further investigation the more severe forms could be checked, and perhaps ultimately made impossible

Fatal Postmortem Examination Without Gloves

The danger of conducting a postmortem examination without gloves was referred to during an inquest on the body of Surgeon Rear-Admiral Sir Percy Bassett-Smith, aged 66, a distinguished officer and well known authority on tropical diseases As a member of the staff of a hospital he performed a postmortem examination without gloves Death was due to septic pneumonia following septicemia, said to have been due to infection from the examination

NETHERLANDS

(From Our Regular Correspondent)

Dec 24, 1927

The International Conference of Eugenics

During the sessions of the Federation internationale d eugenique et d anthropologie it was decided to create a research commission charged with studying the eugenic and dysgenic effects of the World War This group will comprise an economist, a statistician, a physician and a biologist

The scientific assembly was devoted to the study of crossbreeding in human races and to a discussion of Galton's principles of heredity The question of cross-breeding was considered successively from the biologic point of view by Nilhsson-Ehle, from the anthropologic angle by Davenport, and from the social standpoint by Myoen Biologically, the crossing of species plays a considerable role in the determination of characters and in the appearance of hereditary variations With regard to man the problems can merely be stated as yet, their solution involves great difficulties and numerous uncertainties They appear to present an interest that is more theoretical than practical, but their study will aid nevertheless in the comprehension of certain peculiarities of races In certain peoples that are still of pure stock and in certain mixed races, one will find an extensive field of observation In any event, the aspects of the problem are peculiar to each nation

The second topic Galton's law was treated by Major L Darwin and Dr Govaerts According to these two papers the interpretation of eugenics which is most conformable to Galton's ideas and which does not endeavor to outstrip our knowledge of today is that which regards the doctrine as embracing an act of society that permits the family lines that are best endowed to reveal themselves to develop, to increase the number of their descendants, and to protect them selves against all possible causes of a weakening of the ancestral stock

Dedication of the Faculty of Medicine in the Dutch East Indies

Reference was made recently to the modifications that were being made in instruction in medicine in the Dutch East Indies, and particularly to the transformation of the old medical school into a modern faculty of medicine The dedication of the latter took place in the presence of the governor general representing the queen of the Netherlands The governor recalled in his address that within seven years three large institutions of higher instruction had been opened the polytechnic school the Faculty of Law, and the Faculty of Medicine

Industrial Medicine

The bill pertaining to the creation of industrial, or factory, physicians is now being considered The principal points involved are the following An industrial medical service must be under the direction of a physician recognized officially as an industrial, or factory, physician The service must be organized entirely at the expense of the industrial establishment The industrial physician will give first aid in case of accident and may continue the treatment, provided the patient does not express a preference for some other physician Control of the period that the patient must remain away from work and also estimation of the degree of disability may be placed in the hands of the industrial physician The Nederlandsche Maatschappij tot Bevordering der Geneeskunst advocates a complete separation of these duties from those of the attending physician That society recommends also more definite guarantees of free choice of physician on the part of the person ill or injured than are contained in the bill under consideration

Goiter in the Netherlands

Prof Otto Lanz has published an article on goiter in general, giving likewise observations on conditions in the Netherlands The region about Utrecht presents the largest number of goiters The incidence is much higher in the city than in the rural districts Another inquiry carried out by Roux and bearing on 50,000 soldiers has shown that goiter in the Netherlands is localized more particularly in the regions adjoining the large rivers (the Rhine and the Yssel) Goiter is not endemic but sporadic, in the Netherlands It is most frequent in the 10-20 age group, occurring especially in young girls at the time of puberty As a rule, it is a question of diffuse goiters with hyperfunctioning of the thyroid Goiter due to hypothyroidism is not common in the Netherlands The cretins encountered do not ordinarily present any tumefaction of the thyroid, on the contrary glandular atrophy is the rule Under these conditions, general prophylaxis through the administration of iodine is almost useless

Prizes for Researches on Tuberculosis

In 1925, the queen of the Netherlands offered prizes for the best researches on tuberculosis mortality in a definite group of the population of the Dutch East Indies, the subject to be considered from both the clinical and the bacteriologic point of view Five papers were sent in, two of which were awarded prizes The first prize was given to Dr O Paneth government physician at Kaban Djake, who made a special inquiry affecting 2,600 persons residing in six cities, more than 200 of whom were found to be affected with tuberculosis

A Dental Clinic

The stomatologic association of Amsterdam has opened a cooperative clinic, the purpose of which is to support a publicity campaign in favor of dental hygiene among those who cannot afford private dental treatment The fees charged in this cooperative clinic will be determined by the overhead expense

The Crusade Against Malaria

The annual report of the Scientific Committee for the Campaign Against Malaria shows that in addition to the application of petroleum to stagnant waters, experiments have been made with paris green, a solution of which is employed as a fine spray that contains also calcined magnesia in the relation of 1 100 Ten cc of this mixture suffices to spray effectively 1 square meter of territory This solution is frankly larvicidal, although it has no toxic action on insects and vegetation

A New Laboratory of the Public Health Service of Amsterdam

The communal public health service of Amsterdam has opened a laboratory of clinical research which will be at the disposal of not only the physicians of the communal services but likewise of all practitioners of the city All current forms of bacteriologic research will be carried out A special section of the laboratory will be devoted to questions of school hygiene A section of biologic and technical hygiene will deal with questions pertaining to drinking water, the removal of dirt and rubbish, the purification of waste waters, and like problems

Death of Prof W Einthoven

W Einthoven, the learned professor of the Faculte de medecine of Leyden, has died His galvanometer together with his researches on cardiology placed him in the front rank in the field of cardiac physiology

RIO DE JANEIRO

(From Our Regular Correspondent)

Jan 15 1928

Serum Prophylaxis of Measles

Dr Fernandes Figueira reported to the National Academy of Medicine his experience in a measles epidemic in a children's home Thirty-six inmates were already attacked and six were considered as suspicious Twenty-one were treated with convalescents' serum Only two of these developed the disease in a modified form three days after injection

Molds in Pulmonary Tuberculosis

Drs J M Gomes and C Correa reported to the São Paulo Biologic and Health Society the first study of a series Among twenty-six sputum specimens from tuberculous patients, smear examinations disclosed the presence of fungi in fifteen Samples were then planted first in acid broth (two hours at 37 C) and then in Sabouraud's gelose Only nine of the twenty-six specimens proved negative as to fungi A study in sugar mediums failed to disclose any two organisms that were alike Castellani's classification based on carbohydrate fermentation seems deficient unless merely used for molds with well established characters

A Cardiac Type of Chagas' Disease

At the National Academy of Medicine, Dr Carlos Chagas described the cardiac form of American trypanosomiasis (Chagas' disease) The cardiac manifestations may consist in acute or chronic parenchymatous or interstitial myocarditis This differentiates the condition from that caused by syphilis The patients exhibit more or less cardiac weakness, effort dyspnea, palpitation, dizziness Other signs are enlarged heart, decreased arterial pressure, variable irregularities of the pulse and finally asystole In complicated cases no renal lesions or general arteriosclerosis are found Death often occurs suddenly, but the course may also assume a more gradual downward character At the outset extrasystoles, widely spaced in time, predominate until tachysystolia, auricular fibrillation and permanent slow pulse develop Chagas reported a new case in a man, aged 40 with total arrhythmia, and auricular fibrillation, who died suddenly while at complete rest Necropsy disclosed a frank ventricular fibrosis and auricular inflammatory exudate with a clear-cut mononucleosis The parasites were found in the right atrial wall

Roentgenography of the Lesser Interlobar Fissure

Dr M de Abreu lectured before the Rio medical society on the roentgenographic shadow of the lesser interlobar fissure This horizontal fissure appears neatly in roentgenograms and especially teleroentgenograms from an anterior or right and preferable left anterior oblique angle It may be readily detected in about 50 per cent of cases, in the remainder it is sufficient to irradiate downward at a 15 to 20 degree angle In some cases the fissure is hard to locate, as it describes a rather marked curve The roentgenographic location does not quite agree with that given in textbooks of anatomy The dying exhalation and pulmonary retraction change the position in the cadaver The detection of this fissure permits a better study of fissural retraction in cases of pulmonary fibrosis and to verify the degree of the fibrous changes. A pathologic fissure exhibits an increased thickness. It is also more irregular because of pleural induration and parenchymatous fibrosis. Its shadow is thus denser. The greater interlobar fissure may assume a similar appearance, rarely from an anteroposterior angle but often from an anterior oblique position. A view from the left may thus bring into sight both the greater and the lesser interlobar fissures.

ITALY

(From Our Regular Correspondent)

Dec 21 1927

The Congress of Surgery

The Societa italiana di chirurgia held its thirty-fourth congress in Parma, under the chairmanship of Professor Ferrari.

RESISTANCE TO OPERATION—OPERATIVE RISKS

The first main topic on the program, 'How May the Resistance of Patients to Be Operated on Be Evaluated and the Operative Risks Diminished?' was presented by Professor Fasiani of Padua and Professor Torraca of Modena. It is more particularly in those for whom operation is a matter of choice that the preoperative evaluation of individual resistance is of decisive importance. Since the discovery of insulin, the surgical risk in diabetic subjects has been improved and the prognosis of infectious and gangrenous complications has been better. It is important to establish the acid base equilibrium of the patient to be operated on, for it has been observed that anesthesia reduces the carbon dioxide content of the blood from 10 to 15 per cent by volume. Functional capacity and the reserve force of the heart should be evaluated. Valvular defects, if not associated with lesions of the myocardium and if well compensated, are not usually dangerous. Auricular fibrillation should be treated, and the treatment should be controlled with the electrocardiograph. Arterial hypertension, if compensated is not a contraindication to operation provided the kidneys are functioning sufficiently well. Preventive digitalization of patients to be operated on who have sound hearts may present disadvantages and had therefore better be dispensed with. One must not operate on anemic subjects who present less than 2,500,000 red corpuscles, a hemoglobin content less than 30 per cent, or an arterial tension less than 70 maximum and 40 minimum. Insufficiency of the myocardium, respiratory insufficiency, and changes in vascular tonicity may predispose to thrombosis and embolism. Functional tests of the kidneys are important. The speakers emphasized the need of testing the function of the liver, since anesthesia and operative intervention have an unfavorable effect on that organ. The surgeon should aid glycogenesis by means of a diet based chiefly on carbohydrates. Finally, the psychic state and the condition of the vegetative nervous system exert an influence on the resistance of the patient.

HABITUAL CONSTIPATION

The second main topic on the program, 'Habitual Constipation,' was considered in common with the Societa di medicina, and the mode in which the subject was treated was discussed in a previous letter.

Rome was chosen as the place of meeting for the next congress. The main topics on the program are (1) tumors of the digestive tract, and (2) tumors of the spinal cord. The latter topic will be developed jointly with the Societa de medicina interna.

The Sixth Meeting of the Urologic Society

The annual meeting of the Societa italiana di urologia took place in Parma, under the chairmanship of Prof K Alessandri. Dr Wigget of Milan presented the official paper on the topic "The Indications, Technic and Limitations of Cystography." The basis for the paper was material furnished him by Italian urologists and his personal observations made in the urologic department of the Ospedale Maggiore in Milan. As a contrast medium for injection into the bladder the speaker prefers collargol in a 5 to 10 per cent aqueous suspension. Dr Wigget opposed cystography in tuberculosis of the bladder, though he approved it in hypertrophy of the prostate, in calculosis and in bladder tumors. In diverticula radiography is exceedingly important, while in vesico-ureteral reflux it is the only method that enables one to recognize the presence and the proportions of those types in which the clinical signs are few and not characteristic. In the general discussion that followed Terra Abrami expressed a preference for a 5 per cent solution of lithium iodide in cystography and suggested that by the use of sodium bromide in addition its concentration may be reduced to 3 per cent, since in this manner even the smallest vesical calculi are brought into relief.

Lasio stated that a concentrated barium sulphate suspension may produce secondary incrustations. Rome was chosen as the place of meeting of the next congress. The main topic on the program will be 'Colibacillosis.'

Inquiries as to the Modes of Infant Feeding

In a recent circular letter addressed to the prefects of the realm the minister of the interior (the general management of the public health service) gave directions for collecting statistics on infant feeding in Italy and on its effect on the health of infants. The collection of the statistics will be governed by two forms of control to be established one being the death certificate and the other the smallpox vaccination certificate. The central institute of statistics has adopted a new form of death certificate in which, in reporting the death of an infant under 1 year of age the physician must state whether or not the child was breast-fed, and, if so for how long a time whether or not the infant was exclusively breast-fed or received also artificial food, and whether the child was suckled by its own mother. Vaccination against smallpox is a legal requirement for all infants, at the latest before expiration of the first year of life. The physician who performs the first vaccination must state in the report that he sends to the public health office of the commune whether or not the child is suckled by its mother if not, whether or not the child is suckled by a wetnurse, indicating in case it is thus breast-fed whether the child is suckled at the home of its parents or at the nurse's home, and whether or not the child receives any artificial food, and, if so, to what extent.

RUSSIA

(From Our Regular Correspondent)

Jan 15, 1928

The First Union Congress of Pathologists

The First Union Congress of Pathologists met in Kiev from Sept 14 to 20, 1927. More than 600 delegates from all parts of Russia as well as several German professors took part in the work of the congress. This congress aroused considerable interest among the scientists of other specialties. Members attended from the All-Ukranian Congresses, the Second Surgical in Kiev and the First Therapeutic in Odessa. Just on the eve of the Congress of Pathologists there took place the International Congress of Zoologists in Budapest. Prof Rhoda Erdmann made her report both in Budapest and in Kiev. Three subjects were on the program (1) Tissue Cultures and Problems of Pathology, (2) Problems of Malignant Tumors (3) Pathology of the Reticulo-Endothelial System. As the time of the congress coincided with the twenty-fifth anniversary of the death of Prof Rudolf Virchow, Prof N Anichkov of Leningrad made a speech in commemoration of Virchow

TISSUE CULTURES AND PROBLEMS OF PATHOLOGY

Prof Rhoda Erdman reported on tissue cultures and problems of pathology The author said that the development of a tumor is not a cellular but a humoral problem Prof A Krontowski of Kiev reported on the present status of tissue cultures as a method of studying the questions of pathology Prof A Timofejewski of Tomsk made a communication on the culture of tissues and of leukocytes Part of his paper dealt with the culture in vitro of leukocytes from the blood of patients with acute forms of leukemia The development of the tubercle in vitro after the addition of the bacillus of tuberculosis was studied The work of A Fischer, now in Berlin, on the characteristics of malignant cells in tissue cultures also was read He has watched, besides several other things, the growth of normal and cancerous epithelium in vitro He states that cancer epithelium interferes with the growth of fibroblasts

PROBLEMS OF MALIGNANT TUMORS

Prof N Petrov of Leningrad gave a critical survey of experimental malignant growth He spoke on transplantation of tumors, heterogeneous and homogeneous, their culture outside the organism, the changes in the physicochemical state of the medium, the influence of the glands of internal secretion, nervous system heredity, nutrition and other factors Prof A Reprev of Kharkov gave an analysis of the effect on rats of the transplantation of malignant tumors A Krichevsky and Z Sinelnikov of Kharkov reported on a successful transplantation of melanosarcoma from man to white rats P A Kucherenko and M I Kucherenko have discovered, in the endocrine glands, hypoplastic changes of fibrososclerotic character and hypertrophy of the islands of Langerhans under the influence of malignant tumors They connect these discoveries with the premature aging of young patients with tumors B M Solowiev of Kiev examined the connection between physicochemical changes in the organism during its senescence and in the time of the development of malignant tumor

PATHOLOGY OF RETICULO-ENDOTHELIAL SYSTEM

A survey was made by Prof N Anichkov of Leningrad of the morphologic aspects of pathologic changes in the reticulo-endothelial system Prof M Pavlov of Kharkov spoke on the physiologic aspect of this question Prof S Khalatov of Leningrad has discovered that erythrocytes are destroyed by the liver and not by the spleen, the normal composition of blood is regulated mostly by the liver, and when it is diseased the whole organism is affected Prof A I Abrikossov, the president of the congress, and F D Wulf of Moscow spoke on the question of hyperplasia of the reticulo-endothelial system The authors suppose that hyperplasias of the reticulo-endothelial system are entities, and that they differ from secondary hyperplasias of the reticulo-endothelial system and also from the atypical forms of lymphogranulomatosis The researches of N Nicolaev of Moscow were concerned with the pathology of the reticulo-endothelial system of infants under the influence of infections and intoxications

REPORTS ON SUBJECTS NOT ON THE PROGRAM

Prof A Bickel of Berlin reported on researches in carbohydrate and nitrogen exchange under physiologic and pathologic conditions H J Arndt of Marburg gave information on the effect of synthalin and insulin in experiments on animals paying much attention to the metabolism Prof V Lazarev of Kiev reported on the iron in the brain in dementia paralytica Prof S Krinizky of Rostov on-the Don reported on the effect on the organism of war gas, and demonstrated, by photomicrographs, histologic changes in different organs and systems Prof N F Melnikov Rasvedenkov of Kharkov in his paper on organizational questions spoke of the unsatisfactory condition of prosectors in the Union and showed the necessity of improving the material conditions of prosectors

THE CONGRESS EXHIBITION

The congress organized its own exhibition on pathology About a thousand exhibits were sent in from different parts of Russia The so-called silent papers consisted in the exhibition of preparations, with brief descriptions and deductions

At the closing session the congress delegated the professor of surgery S Fedorov of Leningrad to develop, on an international scale, questions connected with goiter, and Prof A I Abrikossov as representative to the International Society of Ethnographic and Geographic Pathology The second Union Congress of Pathologists is proposed for the year 1929 in Baku in the Caucasus

Pathologico-Anatomic Commission Attached to the Academy of Science of Ukraine

At the Academy of Science in Kiev is organized a pathologico-anatomic commission composed of five persons Prof N F Melnikov-Rasvedenkov (president), P A Kucherenko B M Solowiev (secretary), A I Smirnova-Samkova and G I Kvjatkovsky The commission organized a central museum of ethnographic and geographic pathology at the academy of sciences, and an all-Ukrainian pantheon of scientists, where are collected and studied the brains of remarkable scientists

BERLIN

(From Our Regular Correspondent)

Jan 19, 1928

Seventieth Birthday of Professor Minkowski

January 13 Professor Minkowski celebrated his seventieth birthday After retiring, last year, from his post as director of the Medizinische Klinik in Breslau, on reaching the age limit, he established his home in Wiesbaden To be sure, he is not enjoying absolute leisure, for he is serving a sanatorium there as consulting physician Minkowski's greatest scientific achievement consisted in demonstrating that diabetes can be produced through experimental injury of the pancreas In addition, Minkowski, together with his teacher *Naunyn, carried out studies on oxybutyric acid as the parent* substance of the acetone bodies in severe diabetes His experimental extirpation of the liver has thrown light on the nature of icterus and his researches on the physiology and the pathology of uric acid constituted the basis for his monograph on gout as contained in the Nothnagel handbook on 'Spezielle Pathologie und Therapie"

Meeting of the German Society of Internal Medicine

The meeting of the Deutsche Gesellschaft fur innere Medizin will be held in Wiesbaden, April 16-19, under the chairmanship of Prof Dr L R Muller of Erlangen The main topics on the program will be (1) "The Influence of Cancer on Metabolism," the discussion to be opened by O Warburg, Berlin (introduction to cell physiology), Grafe, Wurzburg (clinical observations on the influence of cancer on metabolism), and Sachs, Heidelberg (immunologic observations on the cancer problem, and (2) "Chronic Enlargements of the Spleen' (in cooperation with the Deutsche pathologische Gesellschaft), to be presented by Hueck of Leipzig (the normal spleen as a blood reservoir—preliminary anatomic remarks on the paper on splenomegalia) Naegeli of Zurich (the clinical aspects of splenomegalia), Lubarsch of Berlin (the pathologic anatomy of enlargement of the spleen)

The Coming Meeting of German Scientists and Physicians

The meeting of German scientists and physicians in Hamburg this year is set for September 16 The main topics on the program are The Importance of Wohler's Synthetic Production of Urea, the Scientific Effects of Meteoric Showers, Telephotos, or Telephony with Very Short Waves Problems of Coal Liquefaction Fermentation and Respiration, from the field of the natural sciences Naegeli's Theory in Relation to the Mechanics of Waves, from the field of medicine Sleep, Dreams, Hypnosis etc Sexual Hormones, the Appearance and the Disappearance of Epidemics An exhibit in the fields of medicine and the natural sciences will be organized

The Anthropologic Institute in Dahlem (near Berlin)

At the last session of the Berlin Anthropologische Gesellschaft Prof Eugen Fischer, the director of the institute for anthropologic research, established in Dahlem near Berlin last fall, by the Kaiser Wilhelm Gesellschaft, gave a description of the new institute and announced the nature of the researches that are being carried on there In the anthropologic department, to which the Virchow collection of skulls has been given over for safe keeping not only anthropometry but also anthropobiology will be promoted, for instance the problem of the crossing of races whether thereby changes in the propagation of man will be effected, whether such crossing will bring out new characteristics Furthermore, exact researches on the race characteristics of the German people concerning which very little is known at present will be instituted in various localities throughout the *reich* having a stationary population in order to collect positive data on the color of hair, on skull formation and on hereditary lines of descent Another desire that Fischer entertains is, by means of courses, to make better known to the medical profession the technic of anthropologic measurements and the bases of the theory of hereditary transmission In the department dealing with hereditary transmission in man researches on twins arising from one ovum will be continued in order to establish what characteristics in man are based on heredity and what characteristics are brought out by environmental conditions Fischer is conducting at present a series of experiments on young growing rats whose mothers received a diet poor in vitamins in order to discover how the shape of the skull is affected by the nature of the nutrition In the institute for eugenics the fundamental bases or principles for all eugenic measures will be established, for instance, the importance or significance of the transmission of certain hereditary lines from the standpoint of the vitality and the growth and development of the people as a whole Likewise, questions dealing with the increase and decrease of the birth rate will be studied and an endeavor will be made to determine what classes of society are mainly affected by the decline in the birth rate, and to discover whether there may not be means at hand so to change cultural conditions as to prevent such decline

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Marriages

J Rufus McCracken Waynesville, N C to Miss Minnie B Doar of Georgetown, S C, recently

Walter John Stark Spokane, Wash, to Miss Helen Margaret Smith of Tampa Fla, January 25

Stanley W Holton to Miss Rue Anning, both of Sedro-Woolley, Wash, Dec 14, 1927

S Tumminello to Miss Anna E Dimarco, both of Baltimore Dec 26, 1927

Jarold Elting Kemp to Miss Ann Stewart, both of Philadelphia, January 10

Deaths

Samuel Shugert Adams ⊕ Washington, D C Georgetown University School of Medicine, Washington, 1879, lecturer diseases of children, 1879-1883 and for many years professor of theory and practice of medicine at his alma mater formerly professor of theory and practice of medicine Medical Department of Columbian University, past president of the Medical Society of the District of Columbia, past president and for twenty-five years secretary of the American Pediatric Society, member of the Association of American Physicians, on the staffs of the Children s, Garfield, Sibley and the University hospitals author of 'The Evolution of Pediatric Literature in the United States' and of papers on typhoid in infancy dentition and sudden death in diphtheria, aged 74 died, February 12 of heart disease

George Gotthilf Eitel ⊕ Minneapolis, Minnesota Hospital College Minneapolis 1888 University of Pennsylvania School of Medicine Philadelphia 1891 University of Berlin Germany 1901 proprietor of a hospital bearing his name formerly on the staffs of the Asbury St Barnabas and City hospitals, aged 69 died February 9, of coronary disease

John Neely Rhoads, Philadelphia Jefferson Medical College of Philadelphia 1885 member of the Medical Society of the State of Pennsylvania formerly on the staffs of the Lying-In St Agnes Polyclinic and Jefferson hospitals, aged 68 died January 28 of cerebral hemorrhage

Francis F Wisniewski, Chicago Chicago College of Medicine and Surgery 1910 member of the Illinois State Medical Society aged 43 attending surgeon to the Norwegian-American Hospital where he died February 2 of cerebral hemorrhage and shock, following a fall while skating

John Winfield Harrison ⊕ Middle River, Md, College of Physicians and Surgeons Baltimore 1890 past president of the Baltimore County Medical Society formerly commissioner and health warden of Baltimore County, aged 58, died suddenly January 25 of cerebral hemorrhage

Chauncey Cooley Sheldon, Lynn, Mass, Harvard University Medical School Boston 1877, member of the Massachusetts Medical Society formerly on the staff of the Lynn Hospital aged 79 died January 31 in Boston of coronary sclerosis and hypertrophy of the prostate

Charles R Sumner, Rochester N Y New York Homeopathic Medical College 1877, member of the Medical Society of the State of New York on the staff of the Genesee Hospital aged 75 died, January 27, of carcinoma of the intestine with metastasis in the liver

Leo Thomas McNicholas, Racine Wis Marquette University School of Medicine, Milwaukee 1913 member of the State Medical Society of Wisconsin, served during the World War, aged 41 died, February 7, of pneumonia following influenza

Frederick V Dotterweich ⊕ Ashland Ohio Western Reserve University School of Medicine Cleveland 1895 at one time health officer of Ashland formerly on the staff of the Samaritan Hospital, aged 63 died January 24 of angina pectoris

Charles A Dudley ⊕ Pittsburg Kan University Medical College of Kansas City, Mo 1906 formerly on the staff of the Mount Carmel Hospital aged 47 died January 23, at St Joseph's Hospital Kansas City, Mo, of lobar pneumonia

Myron Darius Briggs, Champlain, N Y, Medical Department of the University of the City of New York 1881 member of the Medical Society of the State of New York, aged 73, died, Dec 27, 1927, at Atlanta, Ga of lobar pneumonia

Hugh H Henry ⊕ Camden, Ark, University of Nashville (Tenn) Medical Department 1903 past president of the Ouachita County Medical Society formerly on the staff of the Camden Hospital, aged 48, died, January 21 of pneumonia

William H Houser, Cherryville, N C, North Carolina Medical College Charlotte 1900, member of the Medical Society of the State of North Carolina, president of the Gaston County Medical Society, aged 58, died in January

Bernardo Hughey, Frankfort Ohio, Columbus Medical College, 1880 member of the Ohio State Medical Association, aged 77, died, January 24 at the Grant Hospital, Columbus, following an operation for carcinoma

Frank Michael Rapoport, Philadelphia, University of Pennsylvania School of Medicine Philadelphia, 1920 served during the World War, aged 31 died February 5, at the University Hospital, of myelogenous leukemia

Adelbert J Clark, Kendall, N Y, University of Buffalo School of Medicine, 1879, aged 76, died, January 13, at the Arnold Gregory Memorial Hospital, Albion, as the result of a cerebral hemorrhage suffered two years ago

Egbert Sumner Dickerson, Indianapolis, Western Reserve University School of Medicine, Cleveland, 1898, aged 55, was killed February 5, when the automobile in which he was driving was struck by a train

Edmund R Knolle ⊕ Brenham, Texas, Medical Department of the Tulane University of Louisiana, New Orleans 1891, formerly on the staff of the Brenham Hospital, aged 59, died, January 23, of nephritis

Forrest Johnston Young ⊕ Milford, Ind Indiana Medical College, School of Medicine of Purdue University, Indianapolis, 1907, served during the World War, aged 51, died, February 8 of arteriosclerosis

Eugene P Notrebe, Denver, Medical Department University of Louisiana, New Orleans, 1887, aged 64, died, January 3 at the Research Hospital, Kansas City, Mo, of carcinoma of the liver and colon

Herman Ramming ⊕ Borger, Texas National University of Arts and Sciences Medical Department, St Louis, 1916, served during the World War, aged 40 died, Dec 28, 1927, at Amarillo of pneumonia

Armand Pfister Smith, Eutaw Ala, Kentucky School of Medicine, Louisville, 1875, member of the Medical Association of the State of Alabama, aged 76, died, Nov 7, 1927, of Adams-Stokes disease

Samuel A MacGregor, Westfield, Wis, Detroit College of Medicine and Surgery 1895, member of the State Medical Society of Wisconsin, aged 60, died Oct 9, 1927, of carcinoma of the rectum

George Robert B Myers ⊕ Napa, Calif, American Medical Missionary College, Chicago, 1903, formerly on the staff of the Napa General Hospital, aged 52 died, January 13, of cerebral hemorrhage

Thompson G Heine, Medford Ore, Minnesota Hospital College Minneapolis 1888, formerly on the staff of the Sacred Heart Hospital, aged 64, died, Dec 27, 1927, of mitral regurgitation

George Harriss West, Newton, N C Medical Department of the University of the City of New York 1873, aged 77, died, January 30, in the Davis Hospital, Statesville, of mitral regurgitation

Eugene Frankel, Chicago, University of Basel, Switzerland, 1896, member of the Illinois State Medical Association, aged 58, died, February 5, of carcinoma of the larynx and mediastinum

George Agnew Hennings, Dell, Ark Homeopathic Hospital College, Cleveland, 1885, aged 64, died recently at St Joseph's Hospital, Memphis, Tenn, of sepsis following thrombotic hemorrhoids

Emanuel Schwab ⊕ Cincinnati Medical College of Ohio, Cincinnati, 1879, member of the Massachusetts Medical Society, aged 70, died, February 3, of myocarditis and nephritis

Francis Marion Thomas, Blue Rapids, Kan, Bellevue Hospital Medical College, New York, 1869, aged 86, died, Dec 7, 1927, at a hospital in Manhattan, of hypostatic pneumonia

William Frank Lewis, Fountain, Mich, Eclectic Medical Institute, Cincinnati, 1895, aged 54, died, Nov 24 1927, at the Mercy Hospital, Manistee, of cirrhosis of the liver

Charles Edwin Manning, Hartford, Wis, St Louis University School of Medicine, 1922, aged 32, died, in January, at Albuquerque, N M, of pulmonary tuberculosis

Evan Hyslin ⊕ Tacoma, Wash, University of Minnesota Medical School, Minneapolis, 1900, aged 56 died suddenly, January 14, of chronic nephritis and hypertension

Homer Erasmus Conner, Akron, Ohio Hospital College of Medicine Louisville Ky, 1877, aged 77, died, January 21, of uremia following hypertrophy of the prostate

Lancelot Mathews Sanders, Troy Ala Tulane University of Louisiana School of Medicine New Orleans, 1922 aged 31, died, January 14, of pulmonary tuberculosis

S Emmett Neihardt, South Boardman, Mich, Medical Department of the University of Wooster, Cleveland, 1886, aged 64 died January 26, of heart disease

Rufus P Moore, Seattle, Vanderbilt University School of Medicine Nashville Tenn, 1893, formerly a druggist, aged 67, died, January 26, of heart disease

Herbert Cutler Bullard, North Attleboro, Mass, Medical Department of Columbia College, New York, 1871, aged 84, died, January 5, at Lawrence, N Y

William Haywood Bobbitt, Indianapolis, College of Physicians and Surgeons, Baltimore, 1882, aged 66, died, February 8 of cerebral hemorrhage

John Epps Sidwell, Lillydale, Tenn, University of Tennessee College of Medicine, Memphis, 1891, aged 64, died, January 19, of tuberculosis

Hugh Barker Powell, Indianapolis, University of Louisville (Ky) School of Medicine, 1894, aged 55, died suddenly, February 2, of heart disease

Emory Freeman Jones, Crumps Park, Ga, Kentucky University Medical Department, Louisville, 1901, aged 53, died, January 28, of heart disease

Frederick Spalding Ward, Springfield, Mass, Dartmouth Medical School, Hanover, N H, 1895, aged 59, died, February 5, of arteriosclerosis

Frank Swarthout Agler, Surprise, Neb, Keokuk (Iowa) Medical College, College of Physicians and Surgeons, 1900, aged 49, died, in January

Peter Augustus Aikman, Windsor, Ont, Canada, Homeopathic Medical College of Missouri, St Louis, 1869, aged 89, died suddenly, January 9

Julia Stoddard Wood, Jennings, La, Georgia College of Eclectic Medicine and Surgery, Atlanta, 1898, aged 67, died, January 25, of nephritis

Allan Huston Adams, Toronto, Ont, Canada, University of Toronto Faculty of Medicine, 1904, aged 48, died, January 14, of pneumonia

John Charles Willard Bland, Tulsa Okla, Missouri Medical College, St Louis, 1883, formerly a druggist, aged 68, died, January 2

David Clark Cramer, Newburg, Pa, Jefferson Medical College of Philadelphia, 1880, aged 73, died, January 3, of arteriosclerosis

Francis A McNeill ⊕ Dove Creek, Colo, Eclectic Medical Institute, Cincinnati, 1874, aged 78, died, Oct 25, 1927, of heart disease

Peter Christensen, North Little Rock, Ark, Homeopathic Medical College of Missouri, St Louis, 1907, aged 70, died, Nov 9, 1927

Leonidas W Trisler, Dayton, Ohio, Eclectic Medical Institute, Cincinnati, 1876, aged 77, died, January 24, of cerebral hemorrhage

William Franklin Pruden, Portland, Ore, Willamette University Medical Department, Salem 1881, aged 84, died, January 17

Milton Rutherford Peters, Boiling Springs, Pa, Hahnemann Medical College of Philadelphia, 1881, aged 72, died, January 9

Everett Alexander Orr, Byron Mich, Detroit Homeopathic College, 1903, aged 47, died, January 16, of heart disease

Orson William Green, Elmhurst, Ill, Hahnemann Medical College and Hospital, Chicago, 1886, aged 81, died, in January

C F Wilkins ⊕ Fort Collins Colo, Columbus Medical College, 1882, aged 72, died, January 9, of dilatation of the aorta

George Warrette Dosh, Brighton Iowa, Rush Medical College, Chicago, 1879, also a druggist, aged 74, died, Oct 10 1927

Elijah Thomas Lawler, Tyler, Texas, University of Louisville (Ky) School of Medicine, 1871, aged 77, died, January 10

William Miller, Thurman Ohio Jefferson Medical College of Philadelphia, 1882, aged 74, died, February 4, of carcinoma

Charles J Cook, Belmont, Ky Indiana Medical College, Indianapolis, 1876, aged 84, died, Nov 5, 1927, of senility

John Lewin McLeish, Cincinnati, Medical College of Ohio, Cincinnati, 1897, aged 56, died, recently, of heart disease

James Woilsdelle Bradley, Adairsville, Ga, Southern Medical College, Atlanta, 1880, aged 77 died, January 11

Emerson David Graham, Keswick, Ont, Canada, Trinity Medical College, Toronto, 1894, died, Oct 23, 1927

Garland A Gerran, High Point, N C, Leonard Medical School, Raleigh, 1897, aged 59, died, January 10

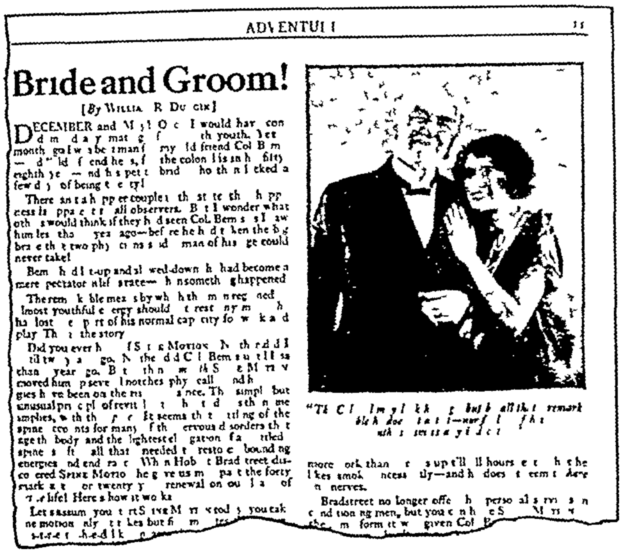
Richard M Greer, Whitney, Texas, Louisville (Ky) Medical College, 1879, died, in January

Bureau of Investigation

THE "DR S J EAGAN" FRAUD

The Federal Trade Commission Exposes the Community of Interests Between an Advertising Agency and a Medical Fake

On December 16, 1927, the Federal Trade Commission issued a Cease and Desist' order in the matter of Leroy A Kling, John E Weddell William R Durgin and Cecil Widdefield, said to be co-partners doing business under such trade styles as "Dr Eagan Manufactory' "Dr S J Eagan," "Dr Eagan Laboratory," "Pharmaceutical Products, Ltd," and Kling-Gibson Company, all of Chicago


ADVENTURE
Bride and Groom!
[By William R Durgin]

The Bride and Groom advertisement by William R Durgin chief copy writer for the Kling Gibson advertising agency The Colonel Bemis the groom was neither Colonel Bemis nor a groom nor was the bride a bride Both were professional models and neither had ever heard of Spine Motion until they read the advertisement!

The Commission, in its findings of facts, declared that Kling, Weddell, Durgin and Widdefield under the various 'Dr Eagan' trade-styles were engaged in the business of selling cosmetics, creams lotions and other toilet preparations on the mail-order plan The Kling-Gibson Company, an advertising agency, was charged with composing and preparing advertisements for the various quackeries exploited under the names "Dr S J Eagan,' 'Dr Eagan Laboratory," etc The Commission declared, further, that in the advertisements of these different quack enterprises were many false, fraudulent and misleading statements and representations regarding the preparations and the ingredients, such representations being made with the intent and purpose of deceiving and defrauding the public

The Commission then specified some of the fraudulent claims Among them were those dealing with a product sold as 'Facial Film," said to have been made according to the private formula of Dr S J Eagan (who was represented as a physician of great ability, experience and high standing) and to have been compounded in a laboratory under the direct supervision of Dr Eagan In fact, there was no Dr S J Eagan, and the toilet articles were prepared and compounded by other manufacturers, who also supplied the formulas

Then there were "Dr Eagan's Magic Gloves,' which were advertised under the claim that they were medicated with a marvelous solution perfected by the famous Dr Eagan The advertisements declared that when worn for one night, these gloves would beautify whiten soften and make smooth the hands as well as remove freckles blotches and discolorations As a matter of fact, they would do none of these things

There were also, 'Dr Eagan's Hand Tissue Builder,' 'Dr Eagan's Skin Whitener," 'Dr Eagan's Medicated Soap and Dr Eagan's Lotion Depilatory ' each of which was advertised under false and fraudulent claims In connection with the Facial Film,' already referred to, the Kling-Gibson concern had stated in the advertisements that it contained a substance (adrenalin) which was worth $5 000 a pound The Federal Trade Commission pointed out that adrenalin had a value of about $16 a pound

In view of the facts given the Federal Trade Commission ordered that the various respondents cease and desist from continuing to perpetrate the various frauds

In this connection readers of The Journal may recall an editorial published October 16 1926 under the title, ' 'Before and After Taking Bradstreet' Hobart Bradstreet was a Chicago quack who capitalized the absurd thesis that we grow old because of a 'settling of the spine' Bradstreet sold a course' in "spine motion —in other words, every man his own chiropractor Some of the pieces of advertising used in exploiting the Bradstreet quackery were some 'before and after" pictures One before taking picture showed a man with a face heavily lined and aged before his time, while the 'after taking' picture purported to show the same man with the lines of age gone due to a five weeks' 'course' in spine motion The Federal Trade Commission brought out the fact that both pictures were taken in the studio at one sitting and the different appearances were produced by the photographer and the engraver The man who sat for the picture was a clothing salesman, who had never heard of Hobart Bradstreet nor his spine motion'

Still another piece of effective and equally fraudulent advertising used by Bradstreet and dealt with in detail by the Federal Trade Commission was an advertisement entitled Bride and Groom This presented in picture and story form a white-haired dignified bridegroom of advanced age, against whose shoulder leaned a good-looking youthful bride The advertisement bore as its author the name of William R Durgin This man is one of the copywriters for the Kling-Gibson advertising agency and has been featured by that agency as the person to whom they pay $50 000 a year for writing 'record-breaking advertisements!"

The Magic Gloves of the noted Doctor Egan Cheap cotton affairs put out by a group of advertising men There was no such person as Doctor Egan

The Durgin advertisement of the bride and groom declared that the groom was a Colonel Bemis,' who was in his fifty-eighth year As an aphrodisian touch the Durgin advertisement had the bride say 'The Colonel may look his age, but by all that's remarkable he doesn't act it—nor feel it, if his enthusiasm is any indication" The Colonel's "enthusiasm," according to the Durgin advertisement was due to a 'course" in Bradstreet's "spine motion ' The facts were, according to the Federal Trade Commission the 'Colonel' was a jeweler salesman who made money on the side as a photographer's model, while the "bride" was a professional model Neither of these persons had ever heard of Hobart Bradstreet until they read the advertisement in which their pictures appeared The Federal Trade Commission issued a "Cease and Desist" order against Bradstreet

The case of the Eagan quackery just cited is of more than ordinary interest to those who believe in truthful advertising THE JOURNAL has pointed out for years that, while the mail-order quack may be debarred from the use of the mails, and even be sent to the federal penitentiary, the advertising agencies and the publications that accept the advertisements *(and obtain the lion s share of the quacks' profits) are not* penalized THE JOURNAL has also pointed out for years the vicious alliance that exists between quackery and certain advertising agencies The advertising agent knows better than any one else how entirely unnecessary it is to have any medical or pharmaceutical knowledge in order to swindle the public through the United States mails, on a medical or pharmaceutical proposition All that is necessary for the successful exploitation of a medical fake is a knowledge of advertising and an absence of conscience

Correspondence

TREATMENT OF GONORRHEA OF CERVIX

To the Editor —I have read with interest the article by Dr Lucius E Burch of Nashville, Tenn, in THE JOURNAL, January 21 While his procedure may be efficient in the treatment of cervical gonorrheal infections, I cannot see how it can be considered applicable to the majority of pelvic infections In a considerable experience it has been exceptionally rare for a case to be presented for examination until there were general pelvic infections

In a study of the pathologic changes in a large number of infected fallopian tubes, I noted that

1 When the infection was gonorrheal it was almost universally bilateral If puerperal or postabortive, it was frequently unilateral, and on the left side, and when occurring in connection with or subsequent to an appendicitis, on the right side

2 In those cases due to gonorrhea, the ciliated epithelium of the tubes was destroyed, the tubes were kinked by adhesions, the fimbriated end of the tubes was frequently obliterated, and infection of the ovary was common

3 The adhesions resulting from pelvic peritonitis whether from gonorrheal or puerperal infection are usually very extensive, and the exudate sometimes fills the true pelvis

True, the pus in an infected tube will frequently become practically sterile, but this does not change the pathologic condition as it relates to a danger of tubal pregnancy, serious menstrual disturbances the result of pelvic adhesions, and even the possibility of intestinal obstruction resulting from adhesions formed during an attack or repeated attacks of pelvic peritonitis The doctor's method is ingenious and undoubtedly would be of value so far as ridding the cervix of the infections is concerned, but it cannot be expected to cure or even benefit the infection beyond the uterus

In a number of cases in which an attempt was made to save the possibility of maternity by leaving one tube and ovary at an operation for tubal pregnancy, it has been necessary to operate for a second tubal pregnancy in varying periods thereafter And I have seen a number of cases seven or more of which have been reported in full before local and state medical societies, in which pregnancy occurred in both tubes, and in all these there has been a definite and clear-cut history that would indicate the origin to be a gonorrheal infection

I agree with the author in the view that gonorrhea in the female is more destructive, more far reaching in its results and more dangerous to the welfare of the woman than tuberculosis or any other condition except cancer

F F LAWRENCE, M D, Columbus, Ohio

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed Every letter must contain the writer s name and address but these will be omitted on request

PACHON OSCILLOMETER FOR DETERMINING BLOOD PRESSURE

To the Editor —I am contemplating the purchase of a Pachon oscillometer Before purchasing however I desire to obtain a reliable opinion from those that know whether or not this instrument is practical and reliable Even the Tycos people who put out a standard clock type of instrument state in their literature that the readings on any instrument of the clock type depending on the oscillations on the hands of the dial are not reliable What is the consensus as to this type of instrument and the Pachon in particular put out by the house of Albert C Gaudin 342 Madison Avenue New York? These people state that there are 25 000 of this type of instrument in use and some of the best men in this country are using it How about that?

CLERY RUTAN TREAT M D, Chico Texas

ANSWER—The oscillometric method of blood pressure determination is generally regarded as offering the most accurate indirect method at hand Visualization of changes in the arterial tension removes the undesirable factor of the personal equation encountered with the palpatory and auscultatory methods Many instruments utilizing the oscillometric principles are on the market and differ only in the mode of compression and in the detection of the oscillation

The Pachon apparatus, besides being very sensitive, is particularly well adapted to hospital and office use The relatively bulky volume of the oscillometer renders it difficult to carry about Its determination of the diastolic pressure is more accurate than most of the methods now available

There are a large number now in use

PERMANENT DILATATION OF PUPIL

To the Editor —A girl aged 2 years was brought to me immediately after she had been hit in the right eye with a stone thrown by a boy I found particles of and in the conjunctiva and on the cornea an abrasion of the cornea over an area of about 2 mm square and a bruise of the lids *at the outer angle of the eye with subconjunctival hemorrhage* The foreign bodies were removed and an antiseptic eye wash was used The patient was given 3 per cent ointment of ammoniated mercury to use in the conjunctiva two times daily Three days later there was a discoloration of the sector of the iris corresponding to the lower third of the circumference of the pupil Another ophthalmoscopic examination at this time revealed blood diffused throughout the anterior chamber (none was found at the time of the first visit) and there was also some bleeding in the vitreous of the eyeball in the lower nasal quadrant There were ecchymoses into the entire upper eyelid and subconjunctivally on the lower nasal quadrant of the eyeball The second day there was a very marked loss in vision Because of the patient s immature age the field could not be determined but there was an external strabismus when the sound eye was covered and the patient fixed on an object indicating that the chief loss of function was probably in the region of the retinovitreous hemorrhage From the very beginning the pupil on the affected side was about 4 mm in diameter while on the sound side the pupil was about 2 mm in diameter This has continued so for over a month now The mother says that before the accident the pupils were alike in size. The affected pupil responds to light and in accommodation as well as to mydriatics and miotics The discoloration of the iris has disappeared as well as signs of hemorrhage in the eye There is still some discoloration subconjunctivally on the eyeball at the external angle but this is fading out slowly Vision is gradually returning The patient has been on ferrous iodide and sodium iodide at different times throughout the month one or the other having been taken continuously Light antiseptic *ointments have been used in the conjunctiva The abrasion of the cornea* is entirely healed.

I have written all this so that you might be able to give me some light on the question of the persistent dilatation of the pupil in the injured eye This is cause for concern to the mother I have given her the impression that this pupil will probably return to normal in time I should like to know the exact explanation of this persistent large pupil If you publish this kindly omit my name

M D California

ANSWER.—Not infrequently a blunt contusion of the eye produces a laceration of the pupillary margin of the iris Such a laceration may be sufficiently extensive to cause a pupillary distortion resembling a coloboma or may be so minute as to escape detection except under the most careful slit lamp observation The tear, which is invariably radial, is apt to involve the musculus sphincter pupillae, resulting in a moderate dilatation of the pupil, known as mydriasis traumatica Accompanying the laceration, which is due to transmitted blunt force there is more or less hemorrhage, which may be confined to the iris stroma or which may escape anteriorly into the aqueous and posteriorly around the equator of the lens into the vitreous That evidently occurred in the case described by our correspondent The decrease in vision may have been due to the interference with light rays by the free blood or may have been due to a partial paralysis of the ciliary muscle with resultant suspension of accommodation, either by contusion or by direct extension of the laceration into the ciliary body In view of the improvement in vision, the former is the more probable The pupillary dilatation may be permanent On the other hand, in many cases the tear in the sphincter eventually becomes closed and there is a restoration of pupillary function

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TREATMENT OF PRECANCEROUS CONDITIONS OF THE LIP

To the Editor —What is the best treatment for early precancerous conditions of the lower lip in a man over 50? There is no gland involvement just a scaliness that has been present for years in the same spot The patient is a pipe smoker and chews tobacco I have advised stopping these The patient is a laboring man the nearest roentgen ray apparatus is 20 miles the nearest radium (except radon plaques) a hundred miles I have considered excision of the area by surgery radon plaques roentgen ray acid nitrate of mercury and electrocoagulation This is a small town general practitioner s problem that I would appreciate your assistance in solving Please omit name and address M D, New Brunswick.

Answer —The description of the lesion here is not clear Apparently our correspondent has reference to one, or perhaps two, circumscribed scaly patches on the lower lip If so these are probably superficial patches of leukoplakia If there is nothing but these white patches that scale a little without redness of the base and without proliferation of the tissues as evidenced by a base that is slightly elevated, probably the best thing to do would be to let them alone The lips should be protected and kept soft by the application, two or three times a day, of a bland salve Ointment of rose water, simple ointment or petrolatum is sufficient If there is anything more than this—short of a definite cancer of the lip—it can be handled satisfactorily by superficial cauterization with acid solution of mercuric nitrate B P This is applied to the patches until they are well cauterized on the surface and have a white pellicle This may be allowed to slough off and heal of itself

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PRODUCTION OF HUNGER PAIN

To the Editor —Kindly give me the current view as to the factors involved in the production of the so-called hunger pain that accompanies not only duodenal ulcer but also some other abdominal pathologic states
George M Niles M D, Atlanta Ga

Answer—The most recent and thoroughgoing studies of the cause or causes of so-called hunger pains in gastric and duodenal ulcers, and in gastric cancer, are those reported by Dr Walter L Palmer in the *Archives of Internal Medicine* (**38** 603 [Nov] 1926, **39** 109 [Jan] 1927) Palmer also critically examines all clinical and experimental literature dealing with the problem up to and including 1926

In gastric and duodenal ulcers, as well as in cancer, there may be no pain at all, there may be intermittent pain, the so called hunger pains, particularly when the stomach is empty or nearly empty or there may be more or less continuous pain this is usually greater when the stomach is empty or nearly empty of food but may be present even during the meal or start from half an hour to two hours after meal Furthermore, spasms in the jejunum and ileum or in any part of the large bowel may sometimes be confused with 'hunger pains In other words different individuals have varying capacities of localizing these pains

As to the cause of the pains there are two prevailing views, probably the older is the view that the pain is induced by acid irritation of the ulcer area This view seemed to receive strong support from the fact that in many cases the pains can be controlled either by eating, which dilutes or neutralizes the gastric juice acid for a while, or by taking alkalis (direct neutralization) However, when the pain is truly intermittent like the normal pangs of hunger it is difficult to explain these pains on the basis of acid irritation alone because of the fact that the pains increase and decrease in intensity despite the continuous acid bathing of the ulcers This comment applies particularly to ulcers in the stomach When the ulcer is located in the duodenum the intermittent pain can be explained on the basis of hydrochloric acid irritation by aid of the intermittent emptying of the acid gastric content into the ulcerated duodenum The second view as to mechanism is based on the fact that the stomach and intestine, even when empty, undergo rhythmic contractions and relaxations, and it has been proved that even in healthy persons, when these contractions are strong enough, they produce pain of varying degrees of intensity This is, of course, well known in the case of so-called gas pains in the large bowel In other words, either strong stretching of any part of the alimentary canal or strong spasmodic contractions cause varying degrees of pain Direct experiments with patients with ulcers have shown that in some cases intermittent pain occurs synchronously with the intermittent hunger contractions In other cases there seems to be no synchronism between the pain and these contractions With the balloon in the stomach one does not register the contractions of the pylorus or the contractions of the duodenum In other words, there is no known method whereby the degree of contraction or spasm in the area immediately surrounding the ulcer can be accurately measured The facts, then, at present may be thus summarized

The hunger pains in ulcer or in carcinoma may be caused by the normal contractions in the region of the ulcers, stimulating nerves that have been rendered hypersensitive by the ulcer In other cases there may be actual acid irritation leading to a state of pain either by acid causing edema in the ulcer area by causing increased reflex contractions, or by direct acid irritation of exposed nerve endings in the ulcer area The situation is complex and the mechanism cannot be predicted in any given case It has been clearly shown, however, that, by stretching the small intestine in persons who have had ulcers and ulcer pains but who have been freed from them by surgery the pains produced are felt by the patients as identical with their old ulcer pains On the basis of direct chemical irritation of hypersensitive pain nerves in ulcer areas one might expect that strong alkalis should also cause increased pain This seems to be true in some cases but the final answer to the question whether direct acid irritation of the nerves in the ulcer ever directly causes pain must await proved cases of ulcer and typical ulcer pains in patients with achylia gastrica

Dr Palmer concludes his study of the mechanism of ulcer pains as follows

> Peptic ulcer with true achlorhydria occurs rarely and the question of the occurrence and type of pain in such cases is unsettled
>
> Hydrochloric acid is the normal stimulus to the pain producing mechanism of sensitive peptic ulcers
>
> Normal gastric peristalsis may be an adequate mechanical stimulus in very sensitive ulcers
>
> Hydrochloric acid may make sensitive both the sensory and the motor gastric mechanisms
>
> No evidence has been found to support the view that hyperchlorhydria may cause typical ulcer pain in the absence of a definite organic lesion of the gastric or duodenal mucosa
>
> Exact localization and differentiation of different types of enteric pain may be very difficult if not at times impossible
>
> Under differing conditions acid irritation and muscle tension may be responsible for all a part or none of the pain of gastric carcinoma

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JOYZ YERBA MATE

To the Editor —What ingredients cause the exhilarating effect obtained from copious ingestion of freshly prepared Joyz Yerba Mate a South American drink? Please use initials only
A C M D Pennsylvania

To the Editor —I have had a request as to the efficacy of a South American drug called Joyz Yerba Mate imported by the International Mate Company Inc of New York Can you give me any information as to its action and the conditions in which it is used?
G B M D Massachusetts

To the Editor —Kindly advise if you have data on South American 'Yerba Mate Tea as useful in medicine particularly diabetes
J G L M D New York

To the Editor —Would it be asking too much to report on this wonderful drink, Joyz Yerba Mate in The Journal?
J M McG M D Oregon

Answer —"Joyz Yerba Mate seems to be a proprietary form of the rather well known Paraguay tea which has for its essential ingredients caffeine and tannin In circulars that have been sent out to those who answer the Joyz Yerba Mate advertisements it is declared that the preparation has marvelous medicinal qualities," and that it is 'considered an excellent corrective for rheumatism kidney troubles and nervous debility and that one of the most striking properties" of Joyz Yerba Mate "is the effect it has of purifying the blood and kidneys and so ridding the system of those poisons that are the fundamental causes of Rheumatism, Gout, Kidney Trouble and debility" The trade package says that it "electrifies your tired body and brain into eager, vivid life again" Paraguay tea is a popular drink in South America, and it is evidently the intention of the International Mate Co, Inc, to introduce it into the United States Apparently the concern has the impression that, in order to get a public to take up what is to them a new drink, it is necessary to invest the product with medicinal qualities of a 'patent medicine" type

STETHOSCOPE FOR PHYSICIAN HARD OF HEARING

To the Editor —I am a junior medical student at the University of Michigan and am slightly deaf I find it very difficult to hear vesicular breath sounds with an ordinary stethoscope Several physicians have suggested using a phonendoscope but I have not been able to find one or learn of its advantages Can you advise me as to whether or not one of these instruments is of any advantage to one in my condition also where are they available?

Student

Answer —A reply to a somewhat similar query was published not long ago A good type of phonendoscope is the Bazzi-Bianchi-Bowles This apparatus will probably be of considerable service and can be obtained from any large dealer in surgical instruments

EFFECTS OF CHRONIC BARBITAL POISONING

To the Editor —I have a patient who has taken 7½ grains of veronal every night for the past ten years She is now getting some difficulty in articulation and numbness in the throat resembling somewhat a bulbar paralysis without any evidence of atrophy Do you think that chronic veronal poisoning could cause a bulbar paralysis? Do you think that 7½ grains of veronal every night for ten years could cause a bulbar paralysis? Please omit name

M D Indiana

Answer —It is not likely that chronic overuse of barbital (veronal) could produce the actual lesions found in bulbar paralysis, but in some cases drooling, inability to swallow and disturbance of articulation have been seen These symptoms clear up after the drug is withdrawn for a time, showing that it is a functional disturbance rather than a degenerative lesion or hemorrhage

The lesions in bulbar paralysis are typical—areas of degeneration, acute inflammatory foci, localized hemorrhages and atrophy of the medulla In polioencephalitis and epidemic encephalitis there is sometimes an involvement of the medulla with a clinical picture of bulbar paralysis Syphilis and tuberculosis, pressure cysts and injuries may produce similar symptoms

BACTERINS

To the Editor —I would appreciate any information you can give regarding the respective merits of plain bacterin and sensitized bacterin versus serobacterin What is your opinion of pertussis bacterin as a preventive and treatment for whooping cough? In industrial work we have occasion to use a considerable amount of serums and vaccines among employees and families

R M Willhour Tulsa Okla
Superintendent First Aid

Answer —So far as it is possible to judge from the results recorded in medical literature, there is no material difference in the value of plain bacterial vaccines and of so-called sensitized vaccines The action of the latter is said to be more rapid than that of the ordinary bacterial vaccine (New and Nonofficial Remedies, 1927, p 371) It is safe to say that the use of bacterial vaccines of all kinds for curative purposes is diminishing and there are no indications that this change in treatment is causing any harm to patients

There is no agreement as to the value of pertussis vaccine among those who have used it either as a preventive or in the treatment of whooping cough

TREATMENT OF GONORRHEA IN A GIRL

To the Editor —A girl aged 9 years has had gonorrhea of more than two years duration Would it be advisable to cauterize the cervix or is there too much danger of getting a stenosis at this age if one cauterizes deeply enough to destroy the glands? Kindly omit name and address

M D Ontario

Answer —Superficial cauterization of the cervix cannot reach the seat of gonorrheal infection, and cauterization penetrating into the deeper tissues may lead to disastrous sloughing and cicatrization without even furnishing any guarantee for eradication of the infection Intravaginal and endocervical manipulations in children are apt to elicit foudroyant spreading of infections

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

Alaska Juneau March 6 Sec, Dr Harry C De Vighne Juneau

California Los Angeles Feb 27 Sec Dr Charles B Pinkham 623 State Bldg San Francisco

Colorado Denver, April 3 Sec Dr Philip Work 324 Metropolitan Bldg Denver

Connecticut Hartford March 13 14 Sec Reg Bd Dr Robert L Rowley 79 Elm St Hartford Homeo Bd New Haven March 13 Sec Dr Edwin C M Hall 82 Grand Ave New Haven

District of Columbia Washington April 10 Sec Dr Edgar P Copeland Suite 110 1801 Eye St Washington

Hawaii Honolulu April 9 12 Sec Dr James A Morgan Room 48 Young Bldg Honolulu

Idaho Boise April 3 Commissioner of Law Enforcement Hon F E Lukens Boise

Illinois Chicago April 10 12 Supt of Reg Mr V C Michels Springfield

Maine Portland March 13 14 Sec Dr Adam P Leighton Jr 192 State St Portland

Massachusetts Boston March 13 15 Sec Dr Frank M Vaughan 144 State House Boston

Minnesota Minneapolis April 17 19 Sec Reg Bd Dr A F Comstock 524 Lowry Bldg St Paul Basic Science examinations April 3 Sec Basic Science Bd Dr E T Bell U of Minnesota Minneapolis

Montana Helena April 3 5 Sec Dr S A Cooney, Power Bldg Helena

New Hampshire Concord March 8 Sec Dr Charles Duncan Concord

New Mexico Santa Fe April 9 10 Sec Dr Wm T Joyner Roswell

Oklahoma Oklahoma City March 13 14 Sec Dr J M Byrum Shawnee

Porto Rico San Juan March 6 Sec Dr Diego A Biascoechea 3 Allen St San Juan

Rhode Island Providence April 5 6 Sec Dr B U Richards State House Providence

Wisconsin Madison March 17 Sec Basic Science Bd Prof M F Guyer U of Wisconsin

New York September Examination

Mr H J Hamilton, chief of the Board of Medical Examiners of the State of New York reports the written examination held at Albany, Buffalo, New York and Syracuse, Sept 19-22, 1927 The examination covered 9 subjects and included 10 questions An average of 75 per cent was required to pass Of the 186 candidates examined, 145, including 8 osteopaths, passed, and 41 candidates, including an osteopath failed Twenty-two candidates were licensed by endorsement of their credentials The following colleges were represented

PASSED

College	Year Grad	Number Passed
University of Arkansas School of Medicine	(1926 3) (1927)	4
Yale University School of Medicine	(1923 2), (1926 3)	5
Georgetown University School of Medicine	(1927)	1
George Washington Univ Med School	(1926 2) (1927 5)	7
Howard University School of Medicine	(1926)	3
Emory University School of Medicine	(1926)	1
Loyola University School of Medicine	(1927)	1
Northwestern University Medical School	(1927)	1
University of Illinois College of Medicine	(1927)	1
Indiana University School of Medicine	(1927)	1
State University of Iowa College of Medicine	(1927)	1
Tulane University of Louisiana School of Med	(1925) (1926)	2
Johns Hopkins University School of Medicine	(1927)	1
University of Maryland School of Medicine and the College of Physicians and Surgeons	(1927)	1
Boston University School of Medicine	(1924) (1927 6)	7
Harvard University Medical School	(1927)	1
Tufts College Medical School	(1927)	2
University of Michigan Medical School	(1925)	3
St Louis University, School of Medicine	(1926) (1927 3)	4
Albany Medical College	(1927)	2
Columbia Univ Coll of Phys and Surgs	(1926 3) (1927 4)	7
Cornell University Medical College	(1927)	5
Long Island College Hospital	(1927)	6
Syracuse University College of Medicine	(1927)	3
University and Bellevue Hosp Med Coll	(1926 2) (1927 6)	8
University of Buffalo School of Medicine	(1927)	3
Eclectic Medical College Cincinnati	(1927)	1
University of Cincinnati College of Medicine	(1927)	1
University of Oklahoma School of Medicine	(1926)	1
Jefferson Medical College of Philadelphia	(1926)	1
University of Pennsylvania School of Medicine	(1927)	1
Woman s Medical College of Pennsylvania	(1924)	1
Meharry Medical College	(1927)	1
University of Tennessee College of Medicine	(1927)	2
Vanderbilt University School of Medicine	(1926) (1927)	2
University of Texas School of Medicine	(1927)	1
University of Vermont College of Medicine	(1924) (1927)	2
Medical College of Virginia	(1925)	1
University of Virginia Department of Med	(1924) (1927 3)	4
McGill University Faculty of Med	(1919) (1925) (1926)	3
Queen s University Faculty of Medicine	(1926) (1927 4)	5
University of Toronto Faculty of Medicine	(1921) (1922) (1924) (1926 2)	5
University of Vienna, Austria	(1917), (1919) * (1923)	3
University of Brussels Belgium	(1923)*	1

Comenian University of Bratislava Czechoslovakia	(1920)*	1
University of Leipzig Germany	(1925)	1
University of Wurzburg Germany	(1920)*	1
University of Athens Greece	(1923)*	1
University of Budapest Hungary	(1918) * (1919)*	2
University of Szegedin Hungary	(1919)*	1
University of Naples Italy	(1898) * (1907)	2
University of Siena Italy	(1924)*	1
University of Kazan Russia	(1916)	1
Dragomanov Institute Russia	(1912)*	1
University of Moscow Russia	(1917)*	1
University of Leningrad Russia	(1913)*	1
University of Edinburgh Scotland	(1927)*	1
University of Basel Switzerland	(1922)*	1
University of Berne Switzerland	(1922) (1927)*	2
American University Medical School Syria	(1927)*	2
Osteopaths		8

College FAILED	Year Grad	Number Failed
University of Arkansas School of Medicine	(1927)	1
Georgetown University School of Medicine	(1927)	1
Howard University School of Med (1925) (1926 2)	(1927)	4
University of Louisville School of Medicine	(1927)	3
Harvard University Medical School	(1927)	1
University of Michigan Medical School	(1923)	1
St Louis University School of Medicine	(1927)	1
Creighton University School of Medicine	(1926)	1
University and Bellevue Hospital Medical College	(1927)	1
University of Buffalo School of Medicine (1925)	(1926)	2
Eclectic Medical College Cincinnati	(1927)	1
University of Oregon Medical School	(1926)	1
Meharry Medical College (1923)	(1927)	2
University of Tennessee College of Medicine	(1927)	1
University of Vermont College of Medicine	(1925)	1
Medical College of Virginia	(1926)	1
Dalhousie University Faculty of Medicine	(1923)	1
McGill University Faculty of Medicine	(1926)	1
Queen s University Faculty of Medicine	(1927)	1
University of Vienna Austria	(1918)*	1
University of Naples Italy (1916) (1922) *	(1923 3)	5
University of Palermo Italy (1919) (1920) *	(1922)*	3
University of Rome Italy	(1920)	1
Donskey University Rostoff on the Don Russia	(1919)*	1
University of Madrid Spain	(1920)*	1
University of Berne Switzerland	(1910)	1
University of Lausanne Switzerland	(1901)	1
Osteopath		1

College LICENSED BY ENDORSEMENT	Year Grad	Endorsement with
George Washington University Medical School	(1920)	Porto Rico
Bowdoin Medical School Brunswick	(1919)	Maine
Baltimore Medical College	(1913)	Penna
Johns Hopkins University School of Medicine (1922) N B M Ex (1926) N B M Ex	(1919)	Canada
Harvard University Medical School (1914) (1922)	(1923)	N B M Ex
University of Michigan Medical School (1923)	(1926)	N B M Ex
Creighton University School of Medicine	(1911)	Nebraska
Cornell University Medical School	(1925)	N B M Ex
Jefferson Medical College of Philadelphia (1926) N B M Ex	(1890)	Diploma
University of Pennsylvania School of Medicine	(1923)	N B M Ex
University of Pittsburgh School of Medicine	(1921)	Penna
Vanderbilt University School of Medicine	(1926)	N B M Ex
University of Virginia Department of Medicine	(1926)	Virginia
University of Toronto Faculty of Medicine	(1916)	Canada
University of Berlin Germany	(1920)	Colorado
University of Moscow Russia	(1916)*	Diploma

Mr Hamilton also reports that 16 candidates were passed on review during 1927 The following colleges were represented

College PASSED	Year Grad	Number Passed
University of Arkansas School of Medicine	(1927)	1
Georgetown University School of Medicine	(1927)	1
University of Louisville School of Medicine	(1927)	2
Harvard University Medical School	(1927)	1
Creighton University School of Medicine	(1926)	1
University and Bellevue Hospital Medical College	(1927)	1
University of Buffalo School of Medicine	(1925)	1
University of Oregon College of Medicine	(1926)	1
University of Tennessee College of Medicine	(1927)	1
McGill University Faculty of Medicine	(1926)	1
Queen s University Faculty of Medicine	(1927)	1
University of Naples Italy	(1923)	1
University of Rome Italy	(1920)	1
University of Lausanne Switzerland	(1901)	1
Osteopath		1

* Verification of graduation in process

California December Reciprocity Report

Dr Charles B Pinkham secretary of the Board of Medical Examiners of the State of California, reports that 23 candidates were licensed by reciprocity from October to December, 1927 The following colleges were represented

College LICENSED BY RECIPROCITY	Year Grad	Reciprocity with
University of Arkansas School of Medicine	(1891)	Oregon
Northwestern University Medical School (1906) Illinois (1909) Wisconsin		Washington
Rush Medical College (1898) Iowa	(1904)	Illinois
University of Illinois College of Medicine	(1916)	Illinois
Central College of Phys and Surgs Indianapolis	(1891)	Michigan
Drake University College of Medicine Des Moines	(1896)	Iowa
State University of Iowa College of Medicine (1910) Iowa	(1908)	S Dakota
University of Michigan Medical School (1900) Ohio	(1908)	Oregon
Beaumont Hospital Medical College St Louis	(1900)	Missouri
Missouri Medical College St Louis	(1898)	Missouri
St Louis University School of Medicine	(1923)	Missouri
University Medical College of Kansas City	(1903)	Kansas
Cotner University Medical Department	(1913)	Nebraska
Columbia University College of Phys and Surgs	(1896)	New York
Eclectic Medical College Cincinnati	(1906)	Texas
Jefferson Medical College of Philadelphia	(1912)	Penna
University of Pennsylvania School of Medicine	(1919)	Iowa
University of Turin Italy	(1904)*	Nevada

* Verification of graduation in process

Colorado October Examination

Dr Philip Work secretary of the Colorado State Board of Medical Examiners reports the written examination held at Denver Oct 4 1927 The examination covered 8 subjects and included 80 questions An average of 75 per cent was required to pass Of the 10 candidates examined 9, including an undergraduate, passed and an osteopath failed Nineteen candidates were licensed by reciprocity and 1 candidate was licensed by endorsement of his credentials The following colleges were represented

College PASSED	Year Grad	Per Cent
Northwestern University Medical School	(1927) 76 3 * 84 3 85 3 *	89 7
St Louis College of Phys and Surgs	(1926) 82 4 (1927) 81 7	84 2
University of Szegedin Hungary	(1921)†	75
Undergraduate		81
FAILED		
Osteopath		65 1

College LICENSED BY RECIPROCITY	Year Grad	Reciprocity with
University of Illinois College of Medicine	(1897)	Iowa
Drake University College of Medicine	(1910)	Iowa
University of Kansas School of Medicine (1914)	(1926)	Kansas
College of Physicians and Surgeons Baltimore	(1910)	Montana
Johns Hopkins University School of Medicine	(1926)	Dist Colum
Maryland Medical College Baltimore	(1912)	Tennessee
Detroit College of Medicine and Surgery	(1918)	Michigan
American Medical College St Louis	(1908)	Missouri
Barnes Medical College St Louis	(1905)	Missouri
Ensworth Medical College St Joseph	(1910)	Missouri
St Louis College of Physicians and Surgeons	(1902)	Illinois
St Louis University School of Medicine	(1926)	Kansas
New York Homeopath Med College and Flower Hosp	(1910)	New York
University of Cincinnati College of Medicine (1925)	(1927)	Ohio
Western Reserve University School of Medicine	(1905)	Ohio
Vanderbilt University School of Medicine	(1920)	Tennessee
Queen s University Faculty of Medicine	(1924)	N Dakota

College ENDORSEMENT OF CREDENTIALS	Year Grad	Endorsement with
Rush Medical College	(1927)	U S Navy

* This candidate will receive his M D degree on the completion of one year s internship in a hospital

† Verification of graduation in process

Iowa October Examination

Mr H W Grefe director of Examinations and Licensure Iowa Department of Health reports the written examination held at Des Moines, Oct 4-7 1927 The examination covered 8 subjects and included 100 questions An average of 75 per cent was required to pass Six candidates were examined all of whom passed The following colleges were represented

College PASSED	Year Grad	Per Cent
Loyola University School of Medicine	(1927) 89 4 *	90 1*
Washington University School of Medicine	(1927)	84 6
University of Nebraska College of Med (1926) 84 8	(1927)	92 6
University of Munich Germany	(1913)	85 3

Mr Grefe also reports that 21 candidates were licensed by reciprocity, July 1, 1927 The following colleges were represented

College LICENSED BY RECIPROCITY	Year Grad	Reciprocity with
Howard University School of Medicine	(1926)	Dist Colum
Northwestern University Medical School	(1925)	Illinois
Rush Medical College (1903) (1926)	(1927)	Illinois
University of Illinois College of Medicine	(1927 2)	Illinois
Harvard University Medical School	(1905)	Maine
University of Minnesota Medical School	(1926)	Minnesota
Marion Sims College of Medicine St Louis	(1899)	Utah
St Louis University School of Medicine (1924)	(1926)	Missouri
Washington University School of Medicine	(1926)	Missouri
Creighton University School of Medicine	(1926)	Nebraska
University of Nebraska College of Med (1922) (1926) Oklahoma	(1926 2)	Nebraska
Western Reserve University School of Medicine	(1918)	Ohio
Marquette University School of Medicine	(1927 2)	Wisconsin

* This candidate will receive his M D degree on the completion of one year s internship in a hospital

Book Notices

Nutrition and Diet in Health and Disease By James S McLester M D Professor of Medicine at the University of Alabama Cloth Price, $8 net Pp 783 Philadelphia W B Saunders Company 1927

Modern knowledge of nutrition is essentially a contribution of the past quarter century Time has hardly been sufficient for proper systematization of available facts or for organization of the knowledge toward practical use This is the task attempted by Dr McLester in his new book on the subject, and he has succeeded notably in beginning to make order out of chaos The material falls naturally into two parts—diet in health and diet in disease Before further considerations are attempted it is necessary to provide the reader with knowledge of basal metabolism and the purpose of food in the human economy While the author s book is complete up to the date of its issue, its discussion of vitamins is already incomplete, owing to the fact that literature in this field grows daily Like other authors who write on nutrition, Dr McLester leans heavily on the works of McCollum and of Sherman, which are basic

While the first half of the book is essentially a contribution to preventive medicine, the second half deals with treatment of disease Here the author considers all the nutritional disturbances, such as diabetes, gout, obesity, kidney disease and digestive disorders In every instance, he provides adequate considerations of dietary detail, so that the book is one of the most practical volumes available for the physician who is concerned with the treatment of disease by dietary modifications It is of course, understood that every modern physician does concern himself with dietary methods The volume supplies excellent recipes for the use of liver diets in pernicious anemia

The third part of the book is devoted to tabular references collected from many sources, and extremely useful A good index supplements one of the best available reference works on this subject

Financial Advice to a Young Man A Program for Getting Along in the World By Merryle Stanley Rukeyser, Associate in Journalism Columbia University Cloth Price, $3 Pp 410 New York Simon & Schuster 1927

The writings of Mr Rukeyser are more intimately known to the readers of The Journal through two articles of a series that have already been published in our columns The author was formerly financial editor of the New York *Herald Tribune* and the New York *Evening Journal*, and is an instructor in finance at Columbia University His previous book on the subject, "The Common Sense of Money and Investments," had an excellent chapter for physicians The present volume tells the young man how to pick a good job, warns him away from "patent medicine" schemes in finance, and instructs him concerning the disposition of such funds as he may accumulate To any serious young man who needs guidance in the beginning of a career, the book is bound to be valuable

Herzhinterwand und oesophageale Auskultation Von Dr S Bondi Privatdozent fur innere Medicin an der Universitat Wien Paper Price 8 40 marks Pp 114 with 32 illustrations Vienna Julius Springer 1927

In the large amount of literature that has appeared, especially in recent years, little attention has been given to investigation of the posterior aspect of the heart or to methods of study that would show deviations from the normal relations of this aspect to the adjacent viscera lying posterior Utilization of the esophagus as a means of approach has also received little consideration In this compact and well written volume the author describes the normal anatomy of the posterior aspect of the heart and great vessels, and its topographic relations Pathologic variations are then described and methods of investigation by the roentgen ray and by dorsal percussion and auscultation The observations in different pathologic conditions are described The second portion of the book is devoted to esophageal auscultation of the heart After a brief historical summary the author describes the form of stethoscope which he has found most advantageous a binaural stethoscope of the ordinary type, the tubes uniting at about the same place as is usual, and then separating, to one tube being affixed a tube bearing a bell for auscultation of the chest wall, and to the other a tube which can be passed down the esophagus For the latter a reconstructed male catheter is used of sufficient stiffness to allow of easy change of position in the esophagus, and of a caliber and length adapted to the patient The communications between the tubes allow the sounds to be transmitted from the distal end of either tube or both, and the esophageal tube may be closed by an ordinary pinch cock The methods of the use of this instrument are described, and the results of observation in normal and pathologic cases The clinical usefulness of esophageal auscultation is a matter of opinion, but the book itself has much of value to those interested in heart disease It is adequately illustrated and has a full index to the literature

Modern Aspects of the Diagnosis, Classification and Treatment of Tuberculosis By J Arthur Myers Associate Professor of Preventive Medicine Medical and Graduate Schools University of Minnesota With an introduction by David A Stewart Associate Professor of Medicine Manitoba University Cloth Price $5 50 Pp 271 with 54 illustrations Baltimore Williams & Wilkins Company 1927

The book presents nothing new, although the whole subject of tuberculosis is pretty well covered It does not impress one as showing much original work on the part of the author, but does indicate a broad knowledge of recent progress There is considerable quoted matter, perhaps too much Careless proofreading is evident in the occasional misspelled words The section on diagnostic points might have been more elaborated to good advantage, but must, as given, be characterized as rather weak The chapter on the history of tuberculosis is especially interesting, more so, in fact, than is usually observed in similar writings on this subject

The Prohibition Mania A Reply to Professor Irving Fisher and Others By Clarence Darrow and Victor S Yarros Cloth Price $2 50 Pp 254 with illustrations New York Boni & Liveright 1927

Not long ago Prof Irving Fisher, sometimes known as an economist in Yale University but perhaps better known to the medical profession as a cooperator with E L Fisk in the work of the Life Extension Institute, issued a book which purported to prove that prohibition had been a tremendous contribution to American advancement and that the Volstead law could be enforced Messrs Darrow and Yarros calmly dissect Professor Fisher and prove at least to the satisfaction of this reviewer that the learned economist was unfair in his attitude, inaccurate in his publication of data, confused in his logic, and in general not quite the unbiased critic that an economist should be Of course, Professor Fisher admits at once that he has not pretended to be unbiased in this matter, but every reader ought to know this at least The authors of the present volume are themselves fanatical supporters of personal liberty, and apparently not adverse to the joys long associated with the imbibition of ethyl alcohol The conclusions of Mr Darrow and Mr Yarros are that present conditions are intolerable, that there is no evidence of any substantial good from prohibition, that it interferes with personal liberty, that our laws cannot be enforced, that the legislation contradicts both science and common sense and that something ought to be done about it

Epidemic Encephalitis (Encephalo Myelitis) By Leo M Crafts B L M D Cloth Price $3 Pp 237 with illustrations Boston Richard G Badger 1927

While this book contains the main facts about encephalitis, it is marred by having been rushed to the printers at an undeveloped stage One gets the impression that it has been talked into a dictaphone, transcribed, and printed without editing or proofreading It abounds in queerly constructed and incomplete sentences and misspellings Among the latter are "endrocarditis,' 'apolpectoform," "crystolic soufle,' "erruptions' As for sample sentences Page 151 "She developed unusual symptoms affecting the facial muscles hypertonic and paretic combined, illustrates the effect of later pregnancy in some cases, the child however escaping infection and indicates what variant syndromes may finally gravitate into the Parkinsonism state in the end ' Page 80 "Botulism usually occurs in groups, very rarely in encephalitis" 'Following this there was some difficulty in swallowing and would hold tablets in mouth Became completely silent Following this quickly came stupor, then coma, stertor at times and transitory Cheyne-Stokes breathing coming and going" Altogether the book in its present form is not a credit to its creators Even the binding is poor

Atlas der Histotopographie gesunder und erkrankter Organe Von Dr Erwin Christeller Direktor der pathologisch anatomischen Abteilung des stadtischen Rudolf Virchow Krankenhauses Cloth Price 90 marks Pp 20 with 88 plates Leipsic Georg Thieme 1927

Beautiful reproductions from photographs in three colors illustrate the minute features of disease in entire organs or in large portions of them They are one of the results of enlarging the surface of the container for carbon dioxide snow so that sections as large as 4 or 6 inches in diameter can be made with the freezing microtome The sections are then stained in various ways and slightly magnified when photographed As a consequence, disease is represented on a large scale and in most of the illustrations as though viewed through a hand lens To a large extent the lesions portrayed are simply those encountered in routine postmortem examinations or in the gross examination of diseased structures soon after removal and while still fresh In place of the normal colors, such as yellow fat, shades of red from blood, natural parenchyma colors, bile and other staining seen when fresh tissues are examined, the gross disease illustrated in this atlas is artificially colored and slightly enlarged But the atlas has another and perhaps a greater value in the highly effective demonstration of the advantages of having such large microscopic sections in which disease may be studied with the unaided eye, as well as with a wide range of equipment for microscopic examination Such large sections have been made heretofore after celloidin or paraffin infiltration requiring weeks or months and with huge expensive microtomes and knives The similar large microscopic preparations made from frozen tissues and used to secure the photographs used in this atlas may be useful in other ways Like the ordinary small microscopic preparations, they may be projected on a screen or, after mounting with a white background, many may be hung vertically so as to swing in frames about a central standard The atlas, therefore, is to be commended as an exhibit of what may be obtained by a modification of apparatus used for preparing tissues for microscopic examination

Primary Studies for Nurses A Text Book for First Year Pupil Nurses Containing Courses of Studies in Anatomy, Physiology Chemistry Hygiene Bacteriology Therapeutics and Materia Medica Dietetics and Invalid Cookery By Charlotte A Aikens Sixth edition Cloth Price, $3 25 Pp 572 with 142 illustrations Philadelphia W B Saunders Company 1927

Five previous editions of this volume attest its usefulness to nurses It is not a textbook of any single subject, but a general guide to almost everything in the nursing field It makes no attempt to discuss the theories of physics, chemistry or biology, but it does give enough of all these subjects to attract the nurse's interest

Angina Pectoris The Anatomy Physiology and Surgical Treatment By Walter B Coffey, M D F A C S Chief Surgeon Southern Pacific Company Philip King Brown A B M D Medical Director Southern Pacific Hospital and John Davis Humber B S M D Surgeon Southern Pacific Company Cloth Price $6 50 Pp 393 with illustrations New Orleans A J Dickerson 1927

This is a summary of the clinical and experimental work of the authors on the surgical aspects of angina pectoris Much of this work already reported and therefore familiar to readers, is here reviewed Rules governing the selection of cases suitable for operation are given, due emphasis being placed on electrocardiographic observations The operation for resection of the superior cervical ganglion is described Then follow a description of the gross anatomy of the sympathetic nervous system and a report of the extensive experimental work of the authors The book must be consulted to get their views as to the nature of angina, its relation to the aorta and the coronary arteries and the nerves, and the place of surgery in the treatment of the condition No surgeon contemplating an operation of this character should fail to consult it It will prove for long a valuable reference book The highest praise must be given the illustrations showing the operation of superior cervical sympathectomy They are truly illuminating and make the various steps remarkably clear The same praise is due the plates showing the anatomy of the sympathetic nerves Unfortunately, the extensive bibliography that completes this book seems to have been compiled by a layman without medical knowledge rather than by a physician There are numerous references which indicate that the compiler of the bibliography was unable to distinguish between various forms of angina The bibliography is full of typographic errors, and some of the German words are grossly distorted

La electrocardiografia en el diagnóstico de las enfermedades del corazón Por C Cortes (Traducida del catalan) Paper Price 4 Ptas Pp 139 with 45 illustrations Barcelona Arnau de Vilanova, 1927

Following a detailed review of the embryology, anatomy and physiology of the heart, the fundamental principles of the electrocardiograph with their application in the diagnosis of organic heart lesions are discussed Numerous electrocardiographic tracings are inserted throughout

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Books Received

Books received are acknowledged in this column and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender Selections will be made for more extensive review in the interests of our readers and as space permits Books listed in this department are not available for lending Any information concerning them will be supplied on request.

Die Bestimmung der Wasserstoffionenkonzentration von Flussigkeiten Ein Lehrbuch der Theorie und Praxis der Wasserstoffzahlmessungen in elementarer Darstellung fur Chemiker Biologen und Mediziner Von Dr med Ernst Mislowitzer Privatdozent fur physiologische und pathologische Chemie an der Universitat Berlin Paper Price 24 marks Pp 378 with 184 illustrations Berlin Julius Springer 1928

Highly technical contribution to physiologic chemistry

Bakteriologisches Taschenbuch Die wichtigsten technischen Vorschriften zur bakteriologischen Laboratoriumsarbeit Von Prof Dr Otto Olsen a o Professor fur Hygiene und Bakteriologie an der Universitat Berlin Twenty eighth edition Cloth Price 3 30 marks Pp 166 Leipsic Curt Kabitzsch 1927

Brief guide to the technic of the bacteriologic laboratory

What You Should Know About Health and Disease By Howard W Haggard Associate Professor of Applied Physiology Yale University With an introduction by Yandell Henderson Cloth Price $5 Pp 538 with 74 illustrations New York Harper & Brothers 1928

A well written but at times complicated explanation of the human body and its activities

Recent Advances in Ophthalmology By W Stewart Duke Elder M A D Sc, Ph D Assistant Ophthalmic Surgeon St George s Hospital Cloth Price $3 50 Pp 343 with 77 illustrations Philadelphia P Blakiston s Son & Company 1927

Literary summary of recent additions to knowledge in this special field

Aids to Gynæcology By Richard E Tottenham B A M D D P H, Professor of Obstetrics and Gynæcology University of Hong Kong Seventh edition Cloth Price, $1 25 Pp 131, with 25 illustrations New York William Wood & Company 1927

Brief handbook with English background

Problems in Psychopathology By T W Mitchell M D Cloth Price $3 50 Pp 190 New York Harcourt Brace & Company Inc, 1927

Lectures with particular reference to the permanent value of Freud's conceptions

Die innere Behandlung von Hautleiden Heft 5 Von Sanitatsrat Dr S Jessner Königsberg i Pr Fourth edition Paper Price, 2 50 marks Pp 57 Leipsic Curt Kabitzsch 1927

Internal medicine for dermatologists

DIE CHIRURGIE Eine zusammenfassende Darstellung der allgemeinen und der speziellen Chirurgie Herausgegeben von Prof Dr M Kirchner und Prof Dr O Nordmann Band IV Teil 2 Lieferung 20 Die Chirurgie der Lungenerkrankungen Von Prof Dr W Jehn Die Chirurgie des Brustkorbes Von Prof Dr A Schubert Paper Price 19 marks Pp 549 758 with 129 illustrations Berlin Urban & Schwarzenberg 1927

THE NOTIFIABLE DISEASES PREVALENCE IN STATES 1926 Supplement No 67 to the Public Health Reports Treasury Department United States Public Health Service Hugh S Cumming Surgeon General Paper Price 10 cents Pp 67 Washington Government Printing Office, 1927

GLASGOW ROYAL MATERNITY AND WOMEN S HOSPITAL Medical Report for the Year 1926 By J N Cruickshank M D F R F P S M R C P Registrar to the Hospital Boards Pp 74 Glasgow William Hodge & Company Ltd 1927

STUDY OF A GROUP OF ALMSHOUSES IN CONNECTICUT NEW JERSEY NEW YORK AND PENNSYLVANIA By the Woman s Department of the National Civic Federation Paper Pp 95 New York 1927

RULES AND REGULATIONS FOR THE PREPARATION AND SUBMISSION OF PLANS FOR SYSTEMS OF SEWERAGE AND SEWAGE AND WASTE DISPOSAL 1927 Paper Pp 28 Albany 1927

FIFTEENTH ANNUAL REPORT OF THE ATLANTIC COUNTY MOSQUITO EXTERMINATION COMMISSION 1927 Paper Pp 28 with illustrations Atlantic City 1927

CARNEGIE CORPORATION OF NEW YORK Report of the President and of the Treasurer for the Year Ended September 30 1927 Paper Pp 77 New York 1927

PROCEEDINGS OF THE EIGHTEENTH ANNUAL CONVENTION OF THE INTERNATIONAL CLAIM ASSOCIATION Cloth Pp 85 New York 1927

TRANSACTIONS OF THE CHICAGO PATHOLOGICAL SOCIETY Vol XII No 5 Paper Pp 289 370 with illustrations Chicago, 1927

Miscellany

DEFINITION OF ANTHROPOLOGY

Anthropology may be defined most briefly as human biology It is a study of man's origin, evolution, differentiation into races and types, and of the changes now going on in man, with their indications for the future In substance it is but advanced human anatomy, physiology, chemistry and pathology Its fundamental distinctive character lies in the fact that it deals with human groups, rather than with individuals, and that all its work is of a comparative, rather than simply descriptive, nature It is essentially the study of human differentiation of the human life-cycle in all its phases and of human variation It deals with the causes as well as the ways and effects of change in man s structure and function, studying the influence on man of all the factors which have ever affected him in the past or are now affecting him, whether in health or in disease It is deeply concerned in the phenomena of heredity, fixation of new characters, degeneration and restitution Its ultimate objects are so to understand man and all that is capable of affecting him that it may aid in safeguarding him from dangers and point out the lines of behavior for favorable further developments The aim of anthropology is an ever more thorough knowledge of the physical man, and on the basis of that knowledge the furthering of future human development, while the aim of scientific medicine is the prevention or cure of derangements of man and thus the removing of obstacles to his onward development Two so closely allied branches of human endeavor cannot but supplement each other and work in close cooperation Anthropology studies and shows the gradual development of man from lower forms This will help the medical man better to understand the still numerous imperfections and consequences of human evolution, some of which may at any time call for his intervention Anthropology studies the consequences of man s domestication and civilization—medicine is commonly called on to correct the defects resulting from those conditions Anthropology studies the laws of human ontogeny, that is of human development from the ovum onward under different conditions, in different races, and medicine tries to overcome and prevent the defects or abnormalities of the same vital phenomena Anthropology knows now and teaches that every part of man, every function, and even every perversion of function, occurs not in a unique, fixed, stereotyped form, but with a substantial and characteristic range of variation, and possibly in a number of types each of which has again its own range of normal variation All this cannot but be of wide and deep significance and help to medicine Anthropology learns the trends weaknesses, defects of whole human groups which may call for the general aid of medicine It sees advantages and dangers on the onward biologic road of individual human groups which call for broad medical attention Anthropology is helping to light, medicine to clear, the road of eugenic, further human evolution —Hrdlicka, Ales Anthropology and Medicine, *Am J Physical Anthropology* **10** 2 (Jan -March) 1927

NOMENCLATURE OF DRUGS

A correspondent has sent us the following complaint He read in an American article a strong recommendation of a drug called methenamine as a urinary antiseptic Inquiries made by the dispensers of his hospital failed, however, at first to identify any drug of this name, and it was only after some trouble that our correspondent learned from America that methenamine was the title adopted by the tenth edition of the United States Pharmacopeia for hexamine This is a very typical example of the confusion that is bound to arise if more than one official name exists in the same language for a single drug We know that similar confusion is constantly arising in regard to many other common drugs which have different titles in this country and in the United States In this particular instance the actual history of the nomenclature of the drug is as follows The substance hexamethylene tetramine became known to the medical profession under the proprietary title of urotropine It was included in the British Pharmacopeia, 1914 under the title hexamine, and in the United States Pharmacopeia IX, 1916 with the name hexamethylenamine Although these titles were not identical, yet they were sufficiently alike to prevent confusion, but unfortunately in 1926 the name was changed to methenamine in the United States Pharmacopeia X We understand that this change was made because it was felt to be desirable to shorten the name and unfortunately proprietary rights were claimed in the United States of America over the name hexamine Some similar reason will usually be found in most cases where a variegated official nomenclature for a single drug puzzles and annoys the practitioners of medicine Such histories obviously indicate a very unsatisfactory state of affairs Medical literature is international, and this is true in a special sense of all medical literature written in the same language There is every advantage in having only one official name in the English language for any particular drug One difficulty is that a large proportion of new drugs are introduced as proprietary articles, and it will usually be necessary for the medical profession to endure one change of name when such drugs are first introduced into the pharmacopeia There is however, no reason why more than one such change should be inflicted, and it is to be hoped that some international agreement will be obtained to insure that, when a name has once been introduced as an official pharmacopeial name in either the United States or this country, it shall be free from capture as a proprietary name, and shall be adopted as the official name in both countries The value to the medical profession of official names for drugs that have been introduced under proprietary titles is that an official and nonproprietary name often reduces the price of a drug by throwing its manufacture open to competition, but if the official names do not succeed in establishing themselves in common use they fail to serve this purpose Now the task of obtaining a satisfactory official name for any drug that has been established under a proprietary title is always likely to be difficult, because the most suitable and obvious names are just the ones which are most likely to be subject to proprietary right Moreover, the proprietary name usually has a long start of the official name If in addition to these unavoidable handicaps the official names differ in different countries, it must often happen that the official names will be ignored and the proprietary names retained in use —Editorial, *Brit M J* **2** 1153 (Dec 17) 1927

Medicolegal

"Morphine" and "Cocaine" Cover Their Hydrochlorides

(Hoffman v United States (U S) 20 Fed R (2d) 328)

The United States Circuit Court of Appeals, Eighth Circuit, in affirming a judgment of conviction of defendant Hoffman of violating the Harrison Narcotic Law says that it was urged that there was a fatal variance between the indictment and the evidence The basis of this was that the third count of the indictment alleged the sale of morphine, when the evidence disclosed the sale of morphine hydrochloride, and the fourth count charged possession of morphine and cocaine, when the evidence showed morphine hydrochloride and cocaine hydrochloride But the term 'morphine," as used in the third count of the indictment, covered "morphine hydrochloride," and the terms 'morphine" and "cocaine," as used in the fourth count of the indictment, covered "morphine hydrochloride" and "cocaine hydrochloride" This court, in *Mathews v United States,* 15 Fed (2d) 139, 143, laid down the test of fatal variance as follows "Was defendant misled? Will defendant be protected against a future proceeding?" The tests laid down in that case were met here The defendant was in no way mislead She denied any sales whatever She was sufficiently protected against a future proceeding for the same sales and the same possession The objections that the evidence proved a different drug from that charged in the indictment were hypercritical

Contraction of Streptococcus Septicemia—Wearing Masks

(Moore v Fidelity & Casualty Co (Calif) 258 Pac R 375)

The Supreme Court of California, in reversing a judgment rendered in favor of the plaintiff as the beneficiary of a combined disability and accident policy having the caption 'Business Women's Disability Policy," says that indemnity was provided therein for bodily injury suffered through accidental means and resulting in disability or death, and illness resulting in disability The insured was a graduate nurse On the third day that she attended a patient in a hospital who was suffering from *Streptococcus hemolyticus* beta, or streptococcus septicemia, commonly known as blood poisoning she was attacked by the same malady and died ten days later

It was to be determined whether the showing made by the plaintiff was sufficient to establish that the insured suffered death by reason of 'bodily injury sustained through accidental means" as provided in the policy It was assumed for the purposes of this case that the contraction of the infection by the insured was a bodily injury, but this court is unable to conclude that such injury was caused by accidental means The term "accident" is defined as "a casualty —something out of the usual course of events, and which happens suddenly and unexpectedly, and without any design on the part of the person injured" In the case at bar the means through which the malady was contracted by the insured was neither unusual nor unexpected There was no element of surprise in coming in contact with the virulent organisms In fact, such contact was foreseen and expected The insured knew and realized the dangers incident to the performance of her duties as an attending nurse, and by gargling washing her hands etc, took precautions to guard against the effect of the incident exposure The fact that others similarly exposed did not contract the disease was not sufficient to prove that the insured contracted it by accidental means That such persons did not fall a prey to what was an expected and anticipated attack from the germs would show no more than that their resistance was greater and the attack unsuccessful Effect must be given to the plain language of the policy, and a distinction must be made between the result to the insured and the means by which that result was brought about It may properly be said that the result to the insured, namely illness and death, was unexpected and unintentional, but that is far from saying that the means that produced the illness and subsequent death were unexpected, unusual or not anticipated This court concludes, therefore, that the death of the insured was not through accidental means,' and that the finding and conclusion of the trial court to the contrary effect were without support in the evidence

It was contended by the plaintiff that, as the defendant knew at the time the policy was issued that the insured was a trained nurse by occupation, it should be held that the defendant should be bound to indemnify against risks it knew it was the insured's duty to incur in the course of her occupation It was pointed out that the policy was headed as indicated above, and it was urged, in effect, that it must have been contemplated by the parties to the contract that death caused as a result of risks incident to the occupation of the insured should be indemnified against and also as matter of law that policies of insurance should be liberally construed in favor of the insured The rule of law asserted cannot be disputed but there must be an opportunity for its application Here it may not be contended that the policy in one of its two main characteristics was not a business women s disability policy The caption did not by its terms or effect enlarge detract from modify or restrict the insuring clause for bodily injuries resulting in death by accidental means

It was stipulated at the trial that none of the physicians interns or nurses in attendance on the patient and none of the relatives or friends who visited him wore masks, and that none of the persons mentioned became infected from the patient except the insured But this court deems these facts of no controlling consequence for the reason that it was in evidence, uncontradicted that while masks are some protection against infection "they are not a good protection' From the evidence it might be reasonably if not necessarily, inferred that while the wearing of gauze masks is a protection to some extent the infection may be contracted, notwithstanding the wearing of such masks

Services Rendered One Person at Request of Another

(Stevens v Amel (Mo) 296 S W R 849)

The Kansas City (Mo) Court of Appeals says that this was a suit in two counts arising in a justice court The first count prayed judgment for $377 for medical services rendered by the plaintiff to defendant Pfnisel and the second count prayed judgment for $50 for surgical services rendered to Pfnisel by a surgeon who had assigned his account to the plaintiff The justice rendered judgment against both defendants for the full amount prayed and defendant Amel alone appealed to the circuit court, where the case was tried without the aid of a jury, resulting in a judgment against Mrs Amel on both counts Mrs Amel was a widow and a cousin of Pfnisel, who boarded with her and who had been severely burned in a gasoline explosion at the cleaning establishment where he worked The plaintiff testified that at Mrs Amel's request he made several trips to the hospital to which Pfnisel had been taken and reported that his condition prevented his being removed, but later he was removed to her home, where the plaintiff treated him for about three months The plaintiff testified further that Mrs Amel promised to pay him that Pfnisel did not at any time say anything about employing him that he did not charge Mrs Amel on his books for these services but made his charge solely against Pfnisel because he was employed by several companies to treat their employees and always made the charge on his books against the employee treated, although he intended to charge the companies for his services Pfnisel testified that he regarded the bill as too large and offered to pay $100 in settlement which offer the plaintiff refused The insurance company settled with Pfnisel but the doctor s bill was never paid by Pfnisel or by Mrs Amel Mrs Amel denied that she promised to pay for the services to be rendered to Pfnisel

On her appeal from the judgment of the circuit court Mrs Amel insisted that that court erred in refusing to give her peremptory declaration of law at the close of all the testimony because her alleged promise to pay the plaintiff not being in writing was void under the statute of frauds (section 2169 revised statutes of Missouri of 1919) The court of appeals thinks that this contention was well taken, and reverses the judgment which was rendered for the plaintiff against Mrs Amel, but, deeming its decision in conflict with that of the Springfield court of appeals in the case of *Mitchell* v *Davis*, 190 S W 357, certified and transferred this case to the supreme court of Missouri

Ordinary the question as to whom the credit was given is one for the jury, and although the plaintiff's books charged Pfnisel alone for the service rendered, this might not be controlling as a matter of law, but the fact that the plaintiff sued both Pfnisel and Mrs Amel, alleging that he and the surgeon rendered services at the special instance and request of both defendants and prayed judgment against both defendants and obtained judgment against them the judgment against Pfnisel having become a final judgment, showed beyond any question that some credit was given Pfnisel The plaintiff in view of his conduct cannot now say that the credit was extended to Mrs Amel alone Another circumstance (but probably one for the trial court sitting as a jury) strongly showing that some credit was extended to Pfnisel, was the fact that the plaintiff presented a bill made out to Pfnisel to the latter s attorney for payment While he testified that he did this at the request of Mrs Amel, there was no testimony that Pfnisel was indebted to Mrs Amel and that Mrs Amel, intending to pay the bill, referred the plaintiff to Pfnisel s attorney for its payment out of money owing her by Pfnisel The effect of the plaintiff's conduct in this regard was that he acquiesced in her request that Pfnisel be looked to for payment of the bill Some suggestion was made in the plaintiff's brief that a joint promise was shown, but there was no merit in that contention Pfnisel was unconscious at the time the alleged contract of employment was entered into and the plaintiff was quite positive in his testimony that the credit was extended to Mrs Amel alone and not in any respect to Pfnisel

Delusions as Test of Insanity and as Affecting Deed

(Ferguson Seed Farms Inc McMillan et al (Texas) 296 S W R 902)

The Court of Civil Appeals of Texas, in affirming a judgment canceling a deed executed in September, 1924, says that plaintiff McMillan alleged that at the time of the execution and delivery of the deed to the defendant, he was of unsound mind and was totally lacking in the mental capacity to execute a valid deed conveying the property in question, that he was caused and impelled by such diseased mental condition to execute said deed The jury found that he was impelled by an insane delusion to execute the deed, and this court is of the opinion that this finding was supported by a preponderance of the testimony The testimony showed that his insanity was of a recurrent or intermittent type, and that he disposed of this property while under the delusion that, if he retained it it would result in his insolvency The true test of the presence or absence of insanity has been stated to be the presence or absence of delusion insanity being always marked by delusions, which indicate an abnormal condition of the mind, and their absence being characteristic of a sound mind It appeared from all the testimony in this case that when the plaintiff s physical health was good and the nervous tension or strain incident to the conduct of his business affairs was not extreme there were no insane delusions such as had afflicted him in 1914 and at the time of the execution of the deed to the defendant The fact that his trouble in 1914 was ten years prior to the execution of the deed to the defendant the court thinks was not so remote as to render evidence of it inadmissible It would seem that the question is one of degree only The further off the evidence is carried the weaker it may be but it is still evidence and should be considered No general time limit can be fixed that will control in all cases When it was shown that under the same conditions of health, and in connection with similar business transactions in 1914, the plaintiff acted from the same delusion under which he acted in 1924 it occurs to this court when considered in the light of the testimony of the physicians who testified that the evidence was admissible, although ten years had intervened between the two transactions

Infirmities and Deeds—Physician and Nurse Privilege

(Meyer et al v Russell (N D) 214 N W R 857)

The Supreme Court of North Dakota, in reversing a judgment which set aside a deed to property the grantor of which was alleged to have been mentally incompetent at the time of the execution of the deed holds that impairment of faculties by disease or old age will not invalidate a deed, provided the grantor fully comprehended its meaning and effect, and was able to exercise his will in executing it

The court also holds that communications to a nurse are not privileged under subdivision 3, section 7923, compiled laws of North Dakota of 1913, unless they are made when the nurse is acting as the assistant or agent of a physician and in such case, if the communications are received or heard from a patient, and are necessary to enable the physician to prescribe or act for the patient, then the privilege extended to the physician applies equally to the nurse, and such communications are privileged A general objection to the testimony of a nurse is not sufficient, the objection should be made to each question calling for privileged information so that the court can determine whether or not the information was acquired by the nurse while assisting the physician

No unfavorable inference can be drawn against a party to an action for objecting to the testimony of a physician, on the ground that such testimony is privileged, nor for the failure to call the physician as a witness

Insufficient Plea of Former Acquittal of Practicing

(McCoy v State (Texas) 296 S W R 574)

The Court of Criminal Appeals of Texas in overruling a motion for a rehearing after affirming a judgment of conviction of defendant McCoy, a chiropractor, of violating the medical practice act says that the defendant interposed a plea in bar on the ground of former acquittal In the plea it was averred that on Feb 6, 1926, he was charged with "unlawfully practicing medicine upon Mrs Vera Spann and divers other persons " On the trial he was acquitted The present trial was on an information charging that on Sept 1, 1926 he did unlawfully practice on J R Cassidy There was no specific averment as to the identity of the transactions If the words 'divers other persons" were effective to charge an offense in treating any person other than Mrs Spann which is very doubtful the plea, in failing to aver that Cassidy was one of the other persons' fell short of the legal requirement that such plea must show the identity of the transaction The only averment on that subject in the plea was that "the facts in the Spann case and the Cassid case are the same' To avail himself of the plea of former acquittal, the transaction must be the same, and the two indictments sustainable by the same proof Moreover, the statute seems to negative the sufficiency of the plea in that each day would be a separate offense, and apparently each person treated would likewise be a separate offense The nature of the criminal act is one applicable to an individual, and not to a collection of individuals

Society Proceedings

COMING MEETINGS

Alabama Medical Association of the State of Birmingham April 17 20 Dr D L Cannon 519 Dexter Avenue Montgomery Secretary
American Association of Anatomists Ann Arbor April 5 7 Dr Lewis H Weed Johns Hopkins Medical School Baltimore Secretary
American College of Physicians New Orleans March 5 9 Mr E R Loveland The Covington 37th and Chestnut Streets Philadelphia Sec y
American Society for the Control of Cancer New York March 3 Dr Thomas M Debevoise 26 Broadway New York Secretary
Louisiana State Medical Society Baton Rouge April 10 12 Dr P T Talbot 1551 Canal Street New Orleans Secretary
Pacific Coast Oto Ophthalmological Society Santa Barbara April 18 20 Dr Walter F Hoffman 817 Summit Avenue Seattle Secretary
Tennessee State Medical Association Nashville April 10 12 Dr H H Shoulders Lambuth Building Nashville Secretary
Tri States Medical Association of Mississippi Arkansas and Tennessee Memphis Tenn February 29 March 2 Dr A F Cooper Bank of Commerce Building Memphis Secretary

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to The Journal in America for a period of three days No foreign journals are available prior to 1921 nor domestic prior to 1923 Periodicals published by the American Medical Association are not available for lending but may be supplied on order Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested)

Titles marked with an asterisk (*) are abstracted below

American J Physical Anthropology, Philadelphia

11 1 148 (Oct Dec) 1927

Human Ilium Sex and Stock W L Straus Jr Cleveland —p 1
Brain of Helen H Gardener (Alice Chenoweth Day) J W Papez, Ithaca N Y —p 29
Middorsal Hair Whorl of Man F Wood Jones Honolulu —p 89
Cusp Development on Second Lower Molars in Bantu and Bushmen J C M Shaw Johannesburg —p 97
Frequency and Distribution of Fossa Pharyngea in Human Craniums H B Collins Jr Washington D C —p 101
Femur V At Birth N W Ingalls Cleveland —p 107
Children on All Fours A Hrdlicka, Washington D C —p 123

Children Walking on All Fours—Five additional cases of children running on all fours are reported by Hrdlicka The total number of reported individual cases showing this physiologic peculiarity now reaches eleven, of which five are in white Americans No sex difference is as yet noticeable The peculiarity begins to manifest itself evidently about the tenth month and may last a variable time So far, only single instances of the phenomenon have been reported from individual families

American Review of Tuberculosis, Baltimore

17 1 102 (Jan) 1928

*Infraclavicular Tuberculous Infiltrations M Fishberg New York —p 1
Physical Signs Over Cavity in Pulmonary Tuberculosis K Dunham and A P Derby Cincinnati —p 22
*Bronchoscopic and Surgical Treatment of Pulmonary Suppuration E A Graham St Louis —p 33
Hospitalization for Tuberculous J A Britton Chicago —p 42
Isolation of Tubercle Bacilli from Septic Material H C Sweany and M Evanoff Chicago —p 47
*Granules of Tubercle Bacillus H C Sweany Chicago —p 53
*Filtrability of Tubercle Bacillus H C Sweany Chicago —p 77
Nonprotein Tubercle Bacillus Antigen M Pinner Northville Mich —p 86
Local Immunization of Guinea Pigs Against Tuberculosis by Intracutaneous Infection with Tubercle Bacilli of Low Virulence G G Ornstein and M M Steinbach New York —p 93

Infraclavicular Tuberculous Infiltrations—Fishberg reports cases of early pulmonary tuberculosis in which the lesion is located below the clavicle, and not in the apex In most cases the onset is insidious, the patient has a mild cough, may or may not lose in weight for many weeks or months, has at times a slight subfebrile temperature, and tires easily Most of these cases are not recognized as early as would be desired, either because the patient does not feel sick enough to consult a physician or, even if he does consult one, because no decisive physical signs are found These cases are recognized by some striking symptoms such as a pulmonary hemorrhage, by finding tubercle bacilli in the sputum, or what is most decisive, by a roentgen-ray examination of the chest Even with a good roentgenogram the lesion may be overlooked when it is small, and located toward the periphery of the lung field, as roentgenologists expect to find the lesion above the clavicle Available evidence tends to show that these infiltrations are caused by endogenous or metastatic reinfections from foci dormant since childhood In other instances, they appear to be merely allergic reactions of lung tissue around slight hitherto dormant, tuberculous lesions

Treatment of Pulmonary Suppuration—Graham is convinced that the mortality in any large series of cases of chronic pulmonary suppuration will inevitably be high, because in about 10 per cent of the cases there will be an associated carcinoma of the lung, either primary or metastatic, and in about another 10 per cent cerebral suppuration, either brain abscess or meningitis, will be present Various auxiliary measures to operation are important, particularly rest in bed, neoarsphenamine in spirochetal cases, properly directed heliotherapy, blood transfusions and a liver diet for the anemia (the latter following the suggestion of Murphy and Minot for pernicious anemia), and a high caloric diet It is also possible that iodized oil may have some slightly beneficial therapeutic effect, although it is difficult to understand how it could be of much avail

Granules of Tubercle Bacillus—A study has been made by Sweany of the granules of the tubercle bacillus in tuberculous lesions in man and in guinea-pigs No rule has been observed regarding the cause of granule formation because the granules exist in apparently favorable environments, and do not exist sometimes in an unfavorable environment Granules in certain stages of their life cycle can be made to sprout and reproduce acid-fast micro-organisms They can in other stages, be caused to sprout into actively motile bacilli that resemble certain young forms seen in bouillon cultures These are nonacid-fast and motile It is thought possible also that such forms may remain nonacid-fast in certain environments Other granules apparently have been observed to degenerate into coccoid forms resembling *Staphylococcus tetragenus* Others apparently go through a gonidiform stage, in which granules are held together in a matrix and may sprout again in a way similar to that in free granules These granules are capable of producing tuberculosis in guinea-pigs when picked out by the single cell method They are also capable of producing pure cultures of tubercle bacilli A semi acid fast moldlike growth was also obtained having tuberculogenic properties and ultimately regaining complete acid-fast properties on animal passage Very small doses of granules produce atypical and chronic tuberculosis while a typical form results from larger doses

Filtrability of Tubercle Virus—Sweany asserts that a virus exists in tuberculous lesions that is capable of passing through the finest Berkefeld filters and producing varying grades of disease in guinea-pigs depending on the particular virus Some viruses produce an emaciation and death without any signs of tuberculosis when passed through one two or three animals Some are capable of regenerating a typical tuberculosis from which typical tubercle bacilli may be recovered An atypical tuberculosis may result from the first filtrate, especially in that from the coarser filters which on animal passage will also produce typical tuberculosis During the process there seems to be a stimulation of the lymphoid tissue in the lungs and a progressive action on the reticulo-endothelial elements producing in some animals giant cells of the Sternberg-Reed type, and approaching gradually the more typical anatomic formations of tuberculosis This fact alone proves that some of the filtrable forms are not tubercle bacilli yet they possess sufficient intrinsic quality to regenerate tubercle bacilli on passage It suggests also a relationship to lymphogranuloma

Annals of Surgery, Philadelphia

87 1 160 (Jan) 1928

Ventricular Punctures W Sharpe New York —p 1
*Spongioblastoma Multiforme of Brain L Davis Chicago —p 8
*Role of Dura Mater in Cranial Decompressive Operations C A Elsberg New York —p 15
*Acquired Arteriovenous Fistula W M Yater Rochester Minn —p 19
Coronary Disease in Surgical Patients A E Phelps New York —p 32
*Association of Hyperthyroidism with Diabetes H J John Cleveland —p 37
Congenital Cystic Dilatation of Common Bile Duct B C Willis Rocky Mount N C —p 48
Cholangeitis Following Cholecystenterostomy Case O H Wangensteen Minneapolis —p 54
*Cystic Lymphangioma of Greater Omentum P M Grausman and H L Jaffe New York —p 66
Abdominal Incisions I M Boykin Philadelphia —p 74
*De Petz Stomach and Intestinal Suturing Apparatus J Loessl Debreczen Hungary —p 80
*Carcinoma of Ovary in Infancy V C Hunt and H E Simon Rochester Minn —p 84
Acid and Alkali Burns of Eye Experimental Study K W Cosgrove and W B Hubbard Detroit —p 89
Indelible Ink Pencil Injuries H Milch New York —p 95
Chromoma of Forearm A E Hertzler Halstead Kan —p 99
Formation from Bone Graft of Radius Congenitally Absent F H Albee New York —p 105
*Use of Flexed Plaster Spica Cast in Treatment of Hip Fractures G A Moore Brockton, Mass —p 111
Untoward Effects of Narcotics and Anesthetics on Robust and Handicapped Patients J L Yates and F Raine Milwaukee —p 124

Metastases from Cerebral Tumor—In Davis' case, metastases from a spongioblastoma multiforme situated in the left temporal lobe occurred in the right arm, left lung and the soft tissues over the right scapula and the left costal margin

Rôle of Dura Mater in Decompression Operation—Elsberg asserts that in states of increased intracranial pressure, a perfectly satisfactory decompression can be obtained if only the outer dural layer is excised, preserving the inner layer The outer layer is used for the plastic closure of dural defects

Acquired Arteriovenous Fistula—Four cases of acquired arteriovenous fistula are reported by Yater In three cases, a determination of the oxygen content of blood taken from a vein in the region of the fistula revealed the presence of arterial blood in the venous channel This test is suggested as a pathognomonic criterion in all cases in which there is doubt as to the presence of an arteriovenous anastomosis

Association of Hyperthyroidism with Diabetes—The association of diabetes with hyperthyroidism is not regarded as a rare occurrence by John When this association does occur, the diabetes usually develops after the onset of the hyperthyroidism The appearance of glycosuria in a case of hyperthyroidism should never be disregarded, but a blood sugar determination two and one-half hours after a heavy carbohydrate meal or else a dextrose tolerance test should be made in order to determine whether or not the glycosuria indicates a diabetic or prediabetic status The treatment of diabetes associated with hyperthyroidism does not vary from the treatment of diabetes without this complication with the exception that, because of the increased metabolism in cases of severe hyperthyroidism, a diet of much higher caloric value than the usual diabetic diet is necessary, and consequently much more insulin is required Thyroidectomy improved carbohydrate tolerance in all cases of diabetes associated with hyperthyroidism in which diabetes is mild in character, in most of these cases, insulogenic function is restored to normal status

Cystic Lymphangiomas of Omentum—Grausman and Jaffe believe that cystic lymphangiomas are true blastomas arising in the greater omentum from undifferentiated mesenchyme which is capable of producing lymphatic vessels by proliferation of lymphangioblasts Many of these newly formed lymphatic vessels become enlarged and cystic because of the blocking of the outlets and possibly because they are blind vessels Some of the original lymphatic vessels are also obstructed and show secondary changes such as dilatation and proliferation of the endothelium The authors believe that the preformed lymphatics are not involved in the tumor growth

De Petz Gastro-Intestinal Suture Apparatus—In fifty-eight cases of resection of the stomach, the de Petz stomach and intestinal sewing apparatus was successfully employed by Loessl in applying the provisional occluding suture in ten cases of carcinoma of the stomach in seventeen cases of pyloric ulcer, in thirty cases of duodenal ulcer and in one case of tuberculous gastric ulcer The passage was reestablished in all cases by means of gastrojejunostomy

Carcinoma of Ovary in Infant.—The patient was only 17 months old She had appeared normal at birth and had been well until six weeks previous to examination when pertussis had developed One month before there had been a slight blood-tinged vaginal discharge resembling menstrual flow This lasted for only a few days but reappeared three days previous to examination The mother had noted also that the breasts were unusually large and that there was an excessive amount of pubic hair There had been moderate loss of weight Two weeks before a mass had been felt in the abdomen, which was enlarging rapidly and had already reached the level of the umbilicus Hunt and Simon removed a tumor of the right ovary weighing 1,000 Gm and measuring 11 by 15 cm Carcinoma of the ovary associated with multiple cysts was diagnosed

Treatment of Hip Fracture—Moore reports further on his method of treatment of hip fracture by placing the injured leg in a position of abduction, flexion and internal rotation, or approximately in a normal sitting position, and having it so held by a plaster spica case during the period of healing

Archives of Neurology and Psychiatry, Chicago

19 1 200 (Jan) 1928

Unsolved Problems Suggested by Cerebellar Connections and Cerebellar Histology O S Strong New York —p 1
*Vasomotor and Pilomotor Manifestations Their Localizing Value in Tumors and Lesions of Spinal Cord Thirteen Verified Cases T Fay Philadelphia —p 31
Functions of Cerebellar Nuclei as Determined by Faradic Stimulation F R Miller and N B Laughton London Ont —p 47
Resorption of Cerebrospinal Fluid Through Choroid Plexus H S Forbes F Fremont Smith and H G Wolff Boston —p 73
Cerebellar Symptomatology Evaluation on Basis of Intracerebellar and Extracerebellar Lesions M Keschner and M Grossman New York —p 78
*Forced Conjugate Upward Movement of Eyes Following Epidemic Encephalitis E W Taylor, Boston and C A McDonald Providence R I —p 95
*Oculo Auricular Associated Movement Possible Utility as Test of Function of Facial Nerve. R M Brickner Baltimore —p 104
*Erythrocyte Sedimentation Reaction Value in Psychiatry J Goldwyn Worcester Mass —p 110
Long Section Blood Sugar Tolerance Study in Case of Depression T Raphael W G Ferguson and O M Searle Ann Arbor Mich —p 120
Kafka Paraffin Reaction in Spinal Fluid L J Karnosh and A J Rademaekers Cleveland —p 125
*Toxic Infectious Disease in Peripheral and Central Nervous System—So Called Neuronitis S Brock and M Ivimey New York —p 129

Localization of Upper Level of Spinal Cord Lesions—A simple method for the accurate determination of the upper level of lesions and tumors of the spinal cord is outlined by Fay In thirteen verified cases, which are reported, the vasomotor line of demarcation has proved to be the most reliable sign, in each case it has determined the exact level of localization In all the cases, a history of a lesion of the spinal cord was evident The Queckenstedt test was positive for partial or complete block The zone of hyperalgesia corresponded exactly with the upper level of vasomotor demarcation A point of tenderness to deep pressure was found in each case over the spinous processes at the level of the lesion From the surgical standpoint, the vasomotor level indicates the root level for operative exploration and, in those cases coming to operation, has proved to be correct, even though the sensory tests in some would indicate a lower position of the lesion in the cord The vasomotor line of demarcation will frequently indicate the level of the lesion before the development of sensory or motor symptoms of focal value This vasomotor sign when associated with a positive Queckenstedt test and a zone of hyperalgesia corresponding to the level of vasomotor demarcation (trauma and evidence of vertebral disease having been ruled out by history or roentgen ray), has been found so far only in lesions producing pressure on the spinal cord The earliest appearance of this sign was noted fourteen hours after injury to the cord, and the longest duration was twenty-eight years following a spinal lesion

Resorption of Cerebrospinal Fluid Through Choroid Plexus—Prussian blue granules were found by Forbes et al within the vessels of the choroid plexus in each of the twelve animals examined This indicates that the direction of the flow of cerebrospinal fluid through the choroid plexus may be reversed by increasing the osmotic pressure of the blood These observations add to the accumulating evidence that the choroid plexus may be regarded as a semipermeable membrane and the cerebrospinal fluid as a true dialysate

Conjugate Movement of Eyes After Epidemic Encephalitis—Thirteen cases are reported by Taylor and McDonald The symptom consists essentially of a forced upturning of the eyeballs, coming on in intermittent attacks and lasting a varying time There are no discoverable constant subjective symptoms associated with the spasmodic movement, and it obviously cannot be classified as hysterical The movements of the eyes in the thirteen cases were predominantly upward, in eight instances, this was the only movement described, in four, this was combined with lateral movement, in one, there was slight external rotation of the right eye and in one downward alternated with upward movement Associated movements of the head occurred in five cases, and in some of these they appeared to be semivoluntary to supplement the strained position of the eyes The frequency of the attacks varied widely from those that occurred daily to those that occurred two or three times a week, in general, the intervals were more than twenty-four hours Furthermore, there was no constant interval between the attacks In one instance, fatigue and embarrassment seemed to increase the frequency The duration of the individual seizures was likewise most variable ranging from one or two minutes to nine or ten hours Between these extremes were attacks that occurred at intervals of half an hour or a few hours, again without constancy of time in individual cases The treatment, largely by scopolamine, was definitely effective in eight cases, in two, it was without result The disappearance of the spasm when the patient lay down was striking in several cases At times this was the only way in which the spasm could be overcome One patient was obliged to lie on the right side to accomplish the desired result In one instance however, the opposite occurred, the patient at times was unable, because of the spasm, to close the eyes at night and was thereby prevented from sleeping

Oculo-Aural Phenomenon of Wilson and Stannus—Two hundred persons have been examined by Brickner in a study of the oculo-aural phenomenon of Wilson and Stannus It was found that the oculo aural response is present in cases of paralysis agitans Therefore, it is unlikely that the reaction is one of the automatic associated movements supposedly mediated through the corpus striatum and the substantia nigra A striking diminution is demonstrated in the range of the movement in the presence of weakness of the facial nerve of even slight degree The possibility of using the phenomenon in determining the presence or absence of lesions of the facial nerve in doubtful cases is discussed

Erythrocyte Sedimentation Reaction in Psychiatric Cases—The erythrocyte sedimentation reaction was determined by Goldwyn in ninety-two cases of dementia praecox, eighteen cases of alcoholic psychoses, fourteen cases of senile psychoses, seven cases of cerebral arteriosclerosis, twelve cases of general paralysis, thirteen cases of manic depressive psychoses, twelve cases of involutional melancholia and thirty cases of other types of psychoses Increased readings were found in all cases of senile psychoses, psychoses due to cerebral arteriosclerosis, general paralysis and neurosyphilis, psychoses showing mental deficiency or somatic disease acute types of alcoholic psychoses, and in many cases of epileptic psychoses and involutional melancholia In dementia praecox, the simple and paranoid types tend to give normal readings while the hebephrenic and chiefly the catatonic types tend to give slightly accelerated reactions Cases showing marked mental deterioration give increased readings No case of dementia praecox showed a marked increase unless complicated by some physical disorder

Kafka Paraffin Reaction in Spinal Fluid—The Kafka paraffin colloidal test on spinal fluid is recommended by Karnosh and Rademaekers as a simple and reliable procedure admirably suited to the small laboratory attached to the hospital ward and to the private office The test compares favorably with that of the gum mastic as far as results are concerned

Toxic Infectious Disease of Nervous System.—Five nonfatal cases are reported by Brock and Kimey, illustrating toxic or infective processes involving the peripheral nerves and the central neuraxis A simple nomenclature is suggested in which the term neuritis is retained—peripheral neuritis for processes limited to the distal parts of the nerve trunks, radiculitis, for involvement of the roots, and central neuritis (spinal, medullary, pontile) for involvement of the neuraxis When more than one part of the nervous system is implicated, these terms may easily be compounded

Archives of Surgery, Chicago

16 1 168 (Jan Part I) 1928

*Metastases of Bone in Primary Carcinoma of Lung Endotheliomas of Bones E F Hirsch and E W Ryerson Chicago—p 1

Sinus Pericranii (Reducible Blood Tumor of Cranium) Origin and Relation to Hemangioma and Abnormal Arteriovenous Communication Case L V Hahn Indianapolis—p 31

Chronic Appendicitis H Koster New York—p 44

*Pathogenesis of Goiter Considered as One Continuous Disease Process A E Hertzler, Halstead Kan—p 61

Relation of Hyperthyroidism to Benign Tumors of Thyroid W F Rienhoff Jr and D Lewis Baltimore—p 79

*Nodular Goiter with Hyperthyroidism H M Thomas Jr Baltimore.—p 117

Duodenal Regurgitation as Factor in Neutralization of Gastric Acidity I Y Olch St Louis—p 125

*Surgical Scarlet Fever Case T B Jones and L A Kohn Rochester N Y—p 139

*Collapse Following Sudden Decompression of Distended Abdomen Experimental Ascites O H Wangensteen and H G Scott Minneapolis—p 144

Thirty Fourth Report of Progress in Orthopedic Surgery P D Wilson Boston and Others—p 153

Metastases to Bone in Primary Lung Cancer—Hirsch and Ryerson present a detailed report of four cases of primary carcinoma of the lung with metastases in one or more bones One of the patients was a boy, aged 6 A year before he died, tissues of the tumor of the bone were diagnosed metastatic carcinoma, and at that time a careful physical examination failed to disclose the primary tumor The bone metastases caused the chief symptoms in these four cases

Sinus Pericranii Communicating Hemangioma of Pericranium—Hahn proposes the term 'sinus pericranii" to designate a hemangioma of the pericranium communicating with intracranial blood sinuses and characterized by distinctive symptoms A case of sinus pericranii of traumatic origin is reported A cure was effected by resection of the extracranial hemangioma The use of electrocoagulation to control bleeding of emissary veins is reported Arteriovenous communications of capillary dimensions were demonstrated in the specimen obtained at operation Such communications provide a dynamic explanation of the origin of sinus pericranii Histologic evidence that the hemangioma in this case was due to abnormal arteriovenous communications is interpreted as reinforcing Reid s conclusions that all simple hemangiomas are of such origin

Chronic Appendicitis—According to Koster, dull aching pain or intermittent and colicky pain in the right lower quadrant of the abdomen may be referable to organic or to functional disturbances in the appendix and from a purely pathologic basis it is not correct to group all the conditions of the appendix responsible for this pain under the heading 'chronic appendicitis" nor is it fair to assume that unless appendixes show all the evidences of a chronic inflammation they cannot be the cause of the symptoms Until it becomes possible to recognize a difference, clinically, between the symptoms produced by a chronic inflammation of the appendix and those produced by kinks adhesions, strictures and other lesions, it is suggested that the term chronic appendicitis be discarded entirely by the clinician as a preoperative diagnostic cognomen and that "appendicular colic' be substituted

Pathogenesis of Goiter—Various stages in the development of the goitrous disease rather than separate types are postulated by Hertzler The first is the colloid stage (adolescent goiter), the second is the chronic toxic stage (toxic adenoma), the third is the acute toxic stage The toxic stage is always associated with increased proliferation of the gland The so-called exophthalmic goiter differs from the so-called toxic adenoma in degree and in rapidity of development but not in kind This paper is based on a study of 1,000 cases

Hyperthyroidism and Benign Thyroid Tumors—Rienhoff and Lewis present a brief analysis of 109 consecutive cases of nodular goiter with hyperthyroidism in which the patients were operated on during the last year, together with a review of 910 cases of hyperthyroidism In 92 per cent of the cases of nodular goiter with hyperthyroidism the nodular elements did not represent true benign neoplasms or adenomas Careful examination of these nodules revealed the fact that the pattern suggests the microscopic appearance of hypertrophy and hyperplasia rather than that seen in recognizable neoplasms of the thyroid gland It would seem that the morbid processes may involve only limited regions of the thyroid, not only in the more active states as evidenced by the localized areas of hypertrophy and hyperplasia, but in the less active and inactive states, as shown by the delimited and sharply defined areas of hyperinvolution, the parenchyma between these affected regions apparently being normal In 34 per cent of the cases in this study the nodular element of the thyroid was composed of involutional bodies In 58 per cent the nodular goiter had resulted from a regional involvement of the parenchyma by the same pathologic process, so that it would appear that the formation of a nodular goiter must be considered as one of the final stages or pathologic sequelae of the clinical entity, hyperthyroidism In only a relatively small percentage (8 per cent) was the nodular element due to a true benign neoplasm The older patients with hyperthyroidism associated with a nodular goiter are those who have survived the disease long enough for the nodules to develop in the thyroid glands The terms 'toxic adenoma' and 'hyperfunctioning adenomatous goiter" are considered to be incorrect and misleading In the small percentage of cases in which true benign neoplasms are associated with hyperthyroidism the histologic manifestations of hyperactivity of the parenchyma have been demonstrated throughout the gland as a whole, so that the neoplasm should be regarded merely as a coincidental pathologic lesion There is no proof that the secretion of a benign tumor can affect the organism as a whole, or that it can give rise to toxic manifestations At present, it is impossible to make a differential clinical diagnosis between a true benign neoplasm, an involutional nodule and a tumor resulting from a localized area of hypertrophy and hyperplasia with involution in a patient with hyperthyroidism Nodular goiter with or without hyperthyroidism and diffuse goiter with or without hyperthyroidism would seem to be more accurate and equally efficacious clinical distinctions

Nodular Goiter with Hyperthyroidism—In a series of thirty-two cases designated as instances of nodular goiter with hyperthyroidism, sections from the gland in every instance revealed areas of hypertrophy and hyperplasia of the thyroid epithelium Patients in the age group below 45 years showed pathologic changes closely simulating those of exophthalmic goiter and their disease is classified by Thomas as mild pure hyperthyroidism Patients in the age group above 45 years nearly all presented morbid conditions, such as heart failure hypertension obesity or anemia which when augmented by more or less slight hyperthyroidism, constitute a serious clinical picture A close parallelism is seen between the degree of hypertrophy and hyperplasia of the thyroid epithelium and that of thyrotoxicosis These cases of nodular goiter with hyperthyroidism seem to differ from cases of exophthalmic goiter chiefly in the degree of thyrotoxicosis and occur mainly in elderly persons who are suffering also from other conditions which disturb the circulatory mechanism These facts seem to be in accord with Rienhoff's hypothesis that 92 per cent of nodules in the thyroid gland are the result of a long standing or frequently recurring overactivity of the thyroid gland

Surgical Scarlet Fever—In the case reported by Jones and Kohn, a small abrasion infected with *Streptococcus scarlatinae* gave rise to a cellulitis of the leg The patient was susceptible to scarlet fever, as determined by the Dick test He developed typical scarlet fever, but there was no angina at the height of the disease Most of the classic features appeared, including strawberry tongue although fortunately there were no complications The blanching test was positive There was a prompt response to the administration of therapeutic antitoxin

Collapse Following Sudden Decompression of Distended Abdomen—Wangensteen and Scott caution that when the markedly distended abdomen is incised, the same precaution of decompressing it slowly, as in paracentesis of the abdomen or chest, should be observed In practice, circulatory collapse following incision of such an abdomen apparently does not occur with any degree of regularity The possibility of such an occurrence, however, exists and should be borne in mind

16 169 450 (Jan Part II) 1928

Extrapleural Resection of Esophagus F Torek New York—p 171
Experimental Abscess of Lung in Dog S J Crowe and J E Scarff, Baltimore—p 176
*Etiology of Abscess of Lung D S Allen St Louis—p 179
*Unresolved Pneumonia O C Pickhardt New York—p 192
Nontuberculous Pulmonary *Suppuration* H Lilienthal New York—p 206
*Abscess of Lung Relieved by Bronchoscopy J D Kernan New York—p 215
*Nontuberculous Bronchopulmonary Suppurative Lesions Treatment by Artificial Pneumothorax W Whittemore and G M Balboni Boston—p 228
*Acute Pulmonary Suppuration Selective Action of Artificial Pneumothorax C Eggers and J D Kernan New York—p 279
*Relation of Bronchopulmonary Suppuration to Empyema A O Wilensky New York—p 288
Empyema Problem A L Lockwood Toronto—p 297
*Cough Action on Material in Tracheobronchial Tract E Archibald Montreal and A L Brown San Francisco—p 322
*Infections of Lymph Nodes of Bronchial Tree W Lerche St Paul—p 338
Thoracic Surgery in America W Meyer New York—p 360
Suppurative Pericarditis Three Cases E W Peterson New York—p 366
Lipomas of Mediastinum E A Graham and E R Wiese St Louis—p 380
Diaphragmatic Hernia S W Harrington Rochester Minn—p 386
*Preliminary Medication in General Anesthesia J T Gwathmey and C W Hooper New York—p 416
*Persistent Nontuberculous Pneumothorax Two Cases L T LeWald New York—p 426
*Recurrent Spontaneous Pneumothorax Three Cases E E Watson and C Robertson Salem Va—p 431

Etiology of Lung Abscess—*Allen reports on the experi*mental production of abscesses of the lung by aspiration of warm pus from patients with chronic abscess of the lung, and the translation of these experimental observations into some of their clinical correlatives

Surgery in Unresolved Pneumonia—As approximately 36 5 per cent of pulmonary conditions diagnosed as unresolved pneumonia will become frankly surgical conditions, Pickhardt feels that the thoracic surgeons should be consulted more frequently when pneumonia does not resolve promptly and properly

Bronchoscopy in Abscess of Lung—Of the 103 cases seen by Kernan, twenty seven followed tonsillectomy and twelve were a sequel of pneumonia In twenty cases the cause was not clear nine cases were caused by foreign bodies, and eight by exposure to cold Sixty-eight of the 103 patients were treated by bronchoscopy Three or more bronchoscopies were performed on these sixty-eight patients, thirty one were cured, as they did not have cough, sputum or fever, but later, two developed some other disease and died Of the others, fifteen were improved, nine were not traced, nine are dead and four are under treatment The patients that seemed to respond best to bronchoscopy were those on whom this operation was performed following tonsillectomy Of the twenty-seven patients on whom bronchoscopy was performed following tonsillectomy, fifteen were cured Of the patients not cured by bronchoscopy, three died Four were operated on, three of these recovered, and one died Five have not been traced One death may be attributed to bronchoscopy Bronchoscopy had been performed on this patient about ten times, following the fatal bronchoscopy he sat up on the table commented on how well he felt, and fell back in a convulsion He died in twenty-four hours At autopsy an embolus was found in the brain

Artificial Pneumothorax in Lung Abscess—Artificial pneumothorax was attempted by Whittemore and Balboni in eighteen cases of abscess of the lung Two patients were completely cured and remained so the treatment being kept up twenty-four and fifteen weeks respectively In two cases, there was temporary improvement (one patient died a year later of bronchopneumonia) Partial pneumothorax brought about improvement in all the symptoms in one patient, fifteen months after the suspension of the pneumothorax, the patient died of an embolus There have been three deaths due to hemorrhage from the lung during treatment In these three cases a partial pneumothorax was created, but the lobe from which the bleeding came was adherent either to the wall of the chest or to the diaphragm, and pneumothorax was ineffective Improvement did not occur in two cases, and in three, a satisfactory pneumothorax could not be produced Empyema complicated the situation in five cases during the treatment Operation was performed in all cases Three patients were entirely cured by drainage, one is still under treatment, and one died In the five cases of bronchiectasis one patient was cured after eighty weeks, and one was improved but is still under treatment after twenty-eight weeks In one case in which the condition was bilateral, pneumothorax was maintained on one side only After fifty two weeks, considerable improvement resulted, then an empyema developed, and death resulted several days after operation In the other two cases, a satisfactory pneumothorax could not be produced

Artificial Pneumothorax in Lung Abscess—Eggers and Kernan report a case of abscess of the lung that strikingly illustrates what may happen if air is allowed to enter the pleural cavity of a patient with suppuration in one lobe, without adhesions and with free bronchial communication The patient made a complete recovery

Relation of Bronchopulmonary Suppuration to Empyema—Of eighty-eight cases of empyema, approximately 25 per cent were complicated by some form of bronchopulmonary suppuration In practically all, the clinical course seemed to indicate that the empyema was secondary to the intrapulmonary lesion Several of the cases occurred during a general infection, and it seems equally possible that the empyema and the pulmonary abscess were independent lesions Most of the other cases followed pneumonia These cases are analyzed by Wilensky In approximately 71 per cent of the cases, some form of bronchopulmonary fistula existed which communicated with the operative wound in the wall of the chest by way of the empyema cavity The pulmonary suppurations occurred in the form of soft abscesses, and they were frequently multiple There was only one case in which an abscess existed which resembled the hard indurated form so commonly seen after a variety of other causes as, for example, after tonsillectomy In this series of eighty-eight cases of empyema, the wounds of all but three of the patients who recovered healed completely after primary operation and remained healed With few exceptions, the postoperative convalescence was uneventful

Action of Cough on Material in Bronchi—The experimental results of the action of cough on iodized oil, iodized oil-sputum emulsion and thick, tenacious sputum which had been injected intratracheally into cats are presented by Archibald and Brown It was observed that cough alone increased the rapidity and degree of penetration of iodized oil and iodized oil sputum emulsion this was even more marked when tracheal compression was applied, thus showing an actual "in driving action of cough A similar "in driving" action of cough on thick tenacious sputum was not noted It is concluded that cough may tend to drive fluid substances similar to iodized oil deeper into the pulmonary tree, and that it is incapable of like action on a heavier substance, such as thick tenacious sputum

Infections of Lymph Nodes of Bronchial Tree—Lerche asserts that inhaled dusts, after entering the pulmonary lymphatics, are carried in the lymph current toward the central depot, i e, the tracheobronchial nodes, and so are bacteria, whether inhaled or blood-borne On their journey toward the tracheobronchial nodes, bacteria may be intercepted and settle in lymphoid masses or bronchopulmonary nodes Tuberculous as well as nontuberculous suppuration occurs in these nodes The tracheobronchial and particularly the bronchopulmonary lymph nodes may be potent factors in the causation of bronchiectasis in childhood Lerche pleads for the use of the terms "tracheobronchial" nodes and "bronchopulmonary" nodes, instead of hilum nodes, bronchial nodes, nodes at the root of the lungs and other terms

Preliminary Medication in General Anesthesia—The preliminary medication suggested by Gwathmey and Hooper for clinical purposes is an injection of morphine sulphate ⅙ grain (8 mg) dissolved in 2 cc of magnesium sulphate solution (50 per cent) This is to be repeated once or twice at twenty or thirty minute intervals, according to the age, weight and general condition of the patient If an idiosyncrasy is present, it will develop before the time for the third dose One-fourth grain (16 mg) of morphine is usually sufficient for women If the patient is to be put to sleep entirely the authors give, in addition to the hypodermic injections, a small dose of ether, 2½ ounces (75 cc), by rectum, paraldehyde 2 drachms (7 5 cc) and olive oil, sufficient to make 4 ounces (120 cc) If nitrous oxide and oxygen are used, the oxygen should be increased to 30 or 50 per cent, instead of the usual 9 or 10 per cent If procaine hypochloride is used for the skin and the peritoneum, the same percentage is required as would be used if preliminary medication had not been given If chloroform and ether are used, only a few drops are required

Persistent Nontuberculous Pneumothorax—In one of the cases reported by LeWald, the collapse persisted for slightly more than a year, in another case the lung has failed to expand after eleven years, and apparently the collapse is permanent

Recurrent Spontaneous Pneumothorax—In one of the cases reported by Watson and Robertson the patient had spontaneous collapse of first one and then the other lung over a period of five years, in the second case, the patient had two collapses eight months apart, and in the third case there were fourteen collapses on the two sides and at one time a bilateral collapse In none of these cases was there evidence of organic pathologic change in the lungs In a fourth patient who is still under treatment the lung has collapsed twice, but there is definite evidence of an early pulmonary tuberculous lesion

Arkansas Medical Society Journal, Little Rock

24 151 166 (Jan) 1928

Leukemia J H Fowler, Harrison—p 151
Replacement Therapy J H McCurry Cash—p 154
Ascites Treated Surgically R C Dorr Batesville—p 159

California and Western Medicine, San Francisco

28 1 144 (Jan) 1928

*Diets for Expectant and Nursing Mothers W D Sansum Santa Barbara—p 33
Trend of Gastric Surgery J H Woolsey San Francisco—p 38
Gastro Intestinal Symptoms Masking Gallbladder Disease C G Toland Los Angeles—p 42
Pelvic Floor Anatomy and Mechanics A W Meyer Palo Alto—p 45
Ambulatory Treatment of Peptic Ulcer F B Taylor, Oakland—p 48
Bacteriology of Rheumatic Endocarditis J C Ruddock Los Angeles—p 51
*Insulin and Intravenous Glucose Injections for Vomiting of Pregnancy C H Lewis Santa Monica—p 54
Renal Surgery Pitfalls and Complications C P Mathe San Francisco—p 57
Sensitization Phenomena in Dermatology H J Templeton Oakland—p 64
Electrodiathermy in Treatment of Benign and Malignant Lesions of Uterine Cervix F M Mikels Long Beach—p 67
Lure of Medical History Paracelsus J Oliver San Francisco—p 72
Premature Rupture of Fetal Membranes Case J L Pritchard San Jose—p 75

Diets for Expectant Mothers—Sansum says that the diets for expectant and nursing mothers should contain ample bulky or residue-containing foods, ample alkaline foods ample sugars and starches and less of the fats ample calories ample protein, ample mineral foods, ample amounts of the vitamins and ample water Ten sample menus are given

Insulin and Dextrose for Vomiting of Pregnancy—Only two of Lewis' patients had the severe type of hyperemesis gravidarum There were ten mild cases, but even in these the condition was sufficiently severe not to have been improved by ordinary methods of treatment, such as regulation of diet, habits, hygiene, elimination and the administration of ovarian extract by mouth or of ovarian extract and corpus luteum hypodermically Lewis has found dextrose and insulin of marked benefit in all cases of nausea and vomiting of pregnancy In properly selected patients 20 cc of 50 per cent dextrose solution containing five units of insulin may be given intravenously, as an office procedure This type of treatment is indicated only for patients in whom there is a derangement of carbohydrate metabolism, either from the pregnancy itself or as the result of continuous vomiting

Iowa State Medical Society Journal, Des Moines

18 1 40 (Jan) 1928

Treatment of Tumors of Bladder by Means of Surgical Diathermy A G Fleischman Des Moines—p 1
Cataract Operations Performed on Patients in Their Own Bed F W Bailey Cedar Rapids—p 8
Lung Abscess S D Gleeten, Monrovia Calif—p 10
Surgery of Kidney V C Hunt Rochester, Minn—p 13
Hemangio Endotheliosarcoma of Spinal Cord J C Hancock and W A Johnston Dubuque—p 18
Kahn Precipitation Test for Syphilis A T A Glomset Des Moines—p 24

Michigan State Medical Society Journal, Grand Rapids

27 1 84 (Jan) 1928

The Doctor s Log W J Stapleton Jr Detroit —p 1
Surgical Attack on Head Pain C F McClintic Detroit —p 15
Dietary Treatment of Pernicious Anemia J Huston Ann Arbor —p 17
Exercise in Treatment of Pulmonary Tuberculosis W I Werner Northville —p 19
Abortions J E Watson Detroit —p 23
Medical Teaching in Sweden Especially Concerning Obstetrics and Gynecology E Essen Moller Lund Sweden —p 25
Plexiform Neurofibroma of Median Nerve W E Blodgett G A Brough, Detroit and J E Lehman Winnipeg Manit —p 28
Health Talks G V A Brown Detroit —p 30
Neurosurgical Clinics of Great Britain France and Holland C F McClintic Detroit —p 32
Lord Lister s Influence on Modern Surgery H C Mack Detroit —p 33

Radiology, St Paul

10 1 92 (Jan) 1928

Influence of Diaphragm on Applicability of Inverse Square Law to Roentgen Ray Dosage E H Quimby and W G Sargent New York —p 1
Roentgen Ray Visualization of Bile Ducts Internal Biliary Fistulas J L Kantor New York and A E Jaffin Jersey City N J —p 10
Colonic Dynamics L J Carter Brandon Manit —p 16
Colonic Malignancy W H McGuffin Calgary Alta —p 21
Ulceration of Colon B R Mooney Edmonton Alta —p 29
Spasticity of Colon J C McMillan Winnipeg Manit —p 35
Colonic Stasis C M Henry Regina Sask —p 41
Differential Diagnosis of Abdominal Tumors by Roentgenologic Method S Brown Cincinnati —p 48
Carcinoma of Cervix Treatment by Combination of Roentgen Rays Radium and Electrothermic Coagulation J T Stevens Montclair N J —p 57
Chronic Osteitis Simulating Osteogenic Sarcoma Case H K Taylor New York —p 62

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below Single case reports and trials of new drugs are usually omitted

British Journal of Experimental Pathology, London

8 413 493 (Dec) 1927

Cytologic Study of Cultures in Vitro of Jensen s Rat Sarcoma H B Fell and J A Andrews —p 413
*Blood Phosphorus in Health and Disease II Renal Disease F B Byrom and H D Kay —p 429
*Nature of Action of Ultraviolet Rays on Micro Organisms T H B Bedford —p 437
*Bilirubinemia in Malignant Tertian Malaria and Blackwater Fever G R Ross —p 442
Antigenic Properties of Four Specimens of Bence Jones Protein Obtained from Cases of Myelomatosis S H G Robinson —p 454
*Therapy of Acute Infections W Susman —p 457
Local Alterations of Blood Vessels of Tarred White Mice L Kreyberg —p 465
Size of Herpes Virus Particles S P Bedson —p 470
*Reactions of and Absorption by Lymphatics Especially of Diaphragm H Florey —p 479

Blood Phosphorus Compounds in Kidney Diseases—The distribution of four types of phosphorus compounds in the blood of thirty-nine patients with renal disease was determined by Byrom and Kay The increase in inorganic phosphorus (and in lipin phosphorus in subacute nephritis) observed by previous workers was confirmed In addition to these changes in the inorganic and lipin fractions, definite changes have been shown to occur in the organic acid-soluble ("ester") phosphorus of the red cells This fraction is altered both in nature and in quantity in advanced nephritis thus demonstrating a deep-seated change in the chemical composition of the erythrocyte itself

Action of Ultraviolet Rays on Micro-Organisms—The results of his experiments regarding the nature of the action of ultraviolet rays on micro-organisms lead Bedford to suggest that photodynamic sensitizers themselves may act through the agency of hydrogen peroxide or some organic peroxide production, and that the typical sensitizer acts (1) by selective adsorption on to the organism concerned, and (2) by peroxide formation when visible light falls on the organism-sensitizer combination

Bilirubinemia in Malignant Malaria—Examination made by Ross in thirty cases of malignant tertian malaria and twenty-one cases of blackwater fever by means of the Fouchet and van den Bergh reactions showed that an increased bilirubinemia occurs in both diseases Bilirubinemia in malignant tertian malaria and initially in blackwater fever is due to intravascular hemolysis, as evidenced by the occurrence of an indirect van den Bergh reaction In blackwater fever an obstructive jaundice may be superadded to the initial hemolytic jaundice This has been observed in patients suffering from suppression of urine Cases of mild hemoglobinuria in the course of malignant tertian malaria are reported The degree of bilirubinemia was remarkably uniform in these cases It is considered that the results justify the assumption that hemoglobinuria is dependent on the rapidity and degree of hemolysis Below a renal threshold value for hemoglobin, only the reticulo endothelial system is concerned in the excretion of the excess Above this value the kidney and the reticulo-endothelial system come into play simultaneously Renal excretion of hemoglobin is, therefore, independent of the activity of the reticulo-endothelial system

Treatment of Acute Infections—In a small series of rabbits the subcutaneous injection of a boiled watery extract of brain tissue was followed by an enhanced effect on the process of agglutinin formation against *B typhosus* The administration of the same extract to large series of mice infected with pneumococcus type I has shown a survival of 133, or 51 per cent, of a total of 262 after a similar number of control animals were all dead The controls received only injections of pneumococci The survival extended over two or three weeks and in several experiments to from five to eight weeks, when the experiments were concluded The enhanced effect of brain extract on the process of immunization may be due to the fact, established experimentally by Susman, that the extract of brain stimulates the pulsations and, probably, the functional activity of the spleen

Factor Controlling Absorption by Lymphatics of Diaphragm—Evidence is presented by Florey to show that intra-abdominal pressure is the factor controlling the rapid absorption of fluids and particles via the diaphragmatic lymphatics A technic is described for viewing the lymphatics of the pleural surface of the diaphragm in a living state

British Medical Journal, London

1 1 38 (Jan 7) 1928

Gallbladder and Its Infections B Moynihan —p 1
Preventive Frame of Mind in Midwifery R W Johnstone —p 6
Induction of Premature Labor in Relation to Mental Disease. R P Smith —p 9
*Treatment of Tennis Elbow G P Mills —p 12
Optic Neuritis and Sphenoidal Sinusitis A C R Walton —p 13
Wire Bristle in Bowel H A Graham —p 13
*Large Ureteral Calculus J C Jefferson —p 14
Foreign Body in Ear for Thirty Six Years W P Kennedy —p 14

Treatment of Tennis Elbow—Mills asserts that cases of "tennis elbow" can be cured by simple manipulation, preferably carried out under nitrous oxide anesthesia. The pathologic origin of the lesion is uncertain but it is suggested that in acute cases a portion of the orbicular ligament may slip between the radial head and the capitellum

Large Ureteral Calculus—The stone in Jefferson's case measured 3¼ inches (83 mm) in length and 1⅝ inches (41 mm) in diameter, and weighed 1 639 grains (106 Gm)

Irish Journal of Medical Science, Dublin

6 605 652 (Oct) 1927

Significance of Optic Neuritis N H Pike —p 611
*Value of van den Bergh Test in Detecting Latent Jaundice R E Steen. —p 625
*Operation for Flail Shoulder with Contractile Deltoid A K Henry —p 634

Value of van den Bergh Test in Detecting Latent Jaundice—Steen emphasizes that the value of the van den Bergh reaction does not lie in any power it possesses of distinguishing between different types of jaundice This it will do only partially, and that in the simpler cases Its greatest value lies in the fact that it can demonstrate hyperbilirubinemia at a time when it cannot be detected by any other means This condition of "latent jaundice' may be of two different types, depending on the kind of bilirubin causing the increase The van den Bergh reaction can differentiate one from the other If the bilirubin is of the type which, having passed through the liver into the ducts, has been subsequently absorbed owing to obstruction, the "direct" reaction is given, if, on the other hand, the bilirubin is of that type which, normally present in small quantities in the serum, has been formed in the tissues, and is being carried by the blood to the liver for excretion, then the "indirect' reaction only is given As the performance of the "direct reaction is as simple as any ordinary clinical test for urine, there is no doubt that it is a test which should be in the hands of every practitioner

Operation for Flail Shoulder—Henry restores the function of a contractile deltoid in a flail shoulder by suspending the shaft of the defective humerus to the coracoid process and the acromion with strong fascial strips

6 653 700 (Nov) 1927

*Bladder in Tabes E D McCrea—p 658
Some Otitic Complications of Influenza P J Keogh—p 670
*Chronic Fibrous Epiploitis R C B Maunsell—p 674
Case of Bilateral Accessory Thyroids F J Morrin—p 675
Case of Hemolysis Following Blood Transfusion in Sprue W E Cooke—p 678

Bladder in Tabes—McCrea concludes that the vesical symptoms of tabes are of two chief clinical types the incontinent, in which there is a very definite cutting off of sensation from the higher centers, and the paretic, in which the sensory loss, though present, is not so evident and is concealed by the interference with the reflex function of the viscus A third group in which the symptoms are of truly mixed type exists, but is rare In the paretic bladder then, the more prominent symptoms are due to interference with the reflex function of the bladder and are largely the result of lesions of the afferent fibers running in the autonomic pelvic nerves In the incontinent bladder the most obvious symptoms are similar to those of a lesion of the sensory pathway of the cord, and this sensory loss plays an important part in the production of muscle senses which are transmitted by the pudic nerves McCrea suggests (tentatively) that tabes rarely affects the autonomic or visceral nerves and the somatic sensory nerves simultaneously, and, if it does never to the same degree This explanation allows of the differentiation between the pelvic and the pudic nerves The most obvious cases of tabes are those presenting destruction of somatic sensory fibers, but not visceral crises

Chronic Fibrous Epiploitis—Maunsell's patient was suffering from intestinal obstruction When the peritoneal cavity was opened no intestines were visible, nothing could be seen except a smooth pearl-white membrane with slight prominences where the intestinal swellings had been left during clinical examination The membrane was continuous above with the peritoneum covering the stomach, was attached to the parietal peritoneum on either side outside the colon and was attached below along the lines of Poupart's ligaments and in front of the bladder At no point was there any adhesion to the anterior abdominal wall, the peritoneum covering which appeared normal in color and texture There was no free fluid The distribution of the membrane was as if a towel had been laid over the intestines and carefully glued at the bottom and sides to the parietal peritoneum An opening was made in the midline through the membrane, which was found to be adherent to the intestines but separable from them by careful dissection and sponging It soon became evident that there were three strong fibrous bands incorporated in the membrane one was adherent deep down in the pelvis and constricted the upper part of the rectum, one constricted the lower part of the descending colon, and the third constricted the ascending colon, just beyond the cecum When these bands were divided gas could be felt gurgling through the intestines The membrane was removed in sections as far as the greater curvature of the stomach over which viscus the peritoneum appeared whiter and felt thicker than normal The intestines, when freed from the membrane, were found to be universally adherent to one another but could be separated by sponging On microscopic examination the fibrous-looking membranes, which were about the thickness of a sheet of morocco leather, were found to be composed on the surface of dense hyaline fibrous tissue, while in the deeper layers the tissue was softer and contained many vessels, similar to those found in a late granulation tissue There was no covering layer of cells on the surface Maunsell has named the condition chronic fibrous epiploitis He failed to find a similar case on record

Journal of Tropical Medicine and Hygiene, London

31 1 16 (Jan 2) 1928

*Anatomic Diagnosis of Yellow Fever W H Hoffmann—p 1

Anatomic Diagnosis of Yellow Fever—Owing to the simplicity of the histologic diagnosis, and because it is superior to any other method, Hoffmann urges that it should be made obligatory in every fatal case the cause of which is unknown, whenever there is a possibility of yellow fever, and especially in the endemic territory of West Africa as it is actually the only objective and reliable diagnostic basis for a systematic campaign An international regulation of the whole problem is indispensable because a satisfactory result under the prevailing difficulties can be obtained only by the unrestricted cooperation of all the countries interested

Lancet, London

1 1 62 (Jan 7) 1928

Study of Temperament and of Disease in Children H C Cameron—p 1
*Cardiac Infarction and Coronary Thrombosis J Parkinson and E Bedford—p 4
Etiology and Treatment of Acute Poliomyelitis S A K Wilson—p 11
*Cure of Gastric and Duodenal Ulcers by Intensive Alkaline Treatment H MacLean I Jones and G Fildes—p 14
Diagnosis of Limp Special Reference to Hip Joint H A T Fairbank—p 19
Parasitic Fetus J Bland Sutton—p 24
*Effects of Plasmochin and Plasmochin Compound on Gametocytes of Benign Tertian and Subtertian Malaria P H Manson Bahr—p 25
Sarcoma of Breast Followed Twenty Years Later by Abdominal Carcinoma A Fullerton—p 26
Case of Coronary Occlusion Following Parturition H W Jones and C A Birch—p 27
*Case of Sarcoma of Cheek Treated by Operation and Injections of Colloidal Lead J B Oldham—p 28

Cardiac Infarction and Coronary Thrombosis—Parkinson and Bedford present an analysis of eighty-three cases of cardiac infarction, or of mortal coronary thrombosis Including four cases of multiple thrombosis, the left coronary or branch was involved in thirty-seven instances and the right in eighteen The site of election for coronary thrombosis was the left anterior descending branch in the first 3 cm of its course In eight cases of syphilitic occlusion both coronary orifices were affected in five instances and the right orifice alone in three, twice with thrombosis Of th eighty-three patients examined post mortem, including seven with coronary occlusion without infarction, the immediate cause of death was cardiac failure in sixty-two of whom twenty-four were brought to the hospital dead In the remaining twenty-one cases death was partly or entirely due to other causes, such as perforated gastric ulcer, strangulated hernia, surgical operations or malignant disease Rupture of the heart was present in five cases, and aneurysmal bulging in five In one case there was hemopericardium without complete rupture Pericarditis was noted in only eleven cases Intracardiac thrombosis was noted in fourteen cases, there was evidence of embolism, old or recent, in sixteen cases (three with infective endocarditis), as follows renal in nine cases splenic in eight, pulmonary in seven, mesenteric in three peripheral in two, cerebral in one and abdominal aorta in one Reference is also made to 100 cases seen clinically The symptoms are described and analyzed, and the treatment is outlined

Intensive Alkaline Treatment of Peptic Ulcer—The use of intensive alkaline therapy in these cases is advocated by MacLean, Jones and Fildes Sufficient alkali is given to the patient to keep the gastric acid neutralized during a period sufficiently long to enable the ulcer to heal They use a powder of the following composition sodium bicarbonate 1 part, magnesium carbonate (powdered), 2 parts, bismuth subcarbonate, 2 parts The dose is a teaspoonful, every two hours taken in water or milk For hospital work, the large amounts of bismuth required may be found to be too expensive and to overcome this the authors use a powder of the following composition bismuth subcarbonate, 1 part, sodium bicarbonate, 3 parts, magnesium carbonate (powdered), 3 parts prepared chalk, 3 parts When liquid diet combined with alkali is given, the patient quickly loses his symptoms within a day or two, and this is especially true with regard to pain If, after a few days of treatment, the patient still complains of persistent pain, it is probable that the condition is not an ulcer or that adhesions to adjacent organs are present Therefore, this method of treatment is of great value as a means of diagnosis The exact details of treatment are not important, but a few simple principles must be kept in mind The most important point is to give sufficient alkali and to see that alkali is available during the night if required In order to overcome, as far as possible, the possibility of the stomach becoming acid during the night, the patient receives a double dose of the powder immediately before retiring One or two doses are also left near his bed and he is warned that if he should wake up with any discomfort he is to take a dose It generally happens that if acid is formed during the night there is not much need for more alkali, so that by warning the patient as to the necessity for taking the powder whenever he wakes up, the difficulty of preventing acid accumulation during the night may be overcome Though it is best for the patient to be in bed during the earlier period of the treatment, this is not always necessary, and whether or not complete rest is insisted on must depend on the circumstances After a few weeks of intensive alkaline treatment the amount of powder given is reduced until it is gradually left off Its use should, however, be continued for several months, especially in the case of duodenal ulcers

Effect of Plasmochin on Malaria—Manson-Bahr says that plasmochin with quinine exerts a selective action on the gametocytes of subtertian and benign tertian malaria Even in small therapeutic doses its action on the parasite is much more rapid and striking than that of quinine uncombined with plasmochin The drug has the additional advantage of being tasteless, and is extremely well tolerated The clinical results so far observed have been very satisfactory The effect of any drug on the crescent, which is admittedly the most resistant form of the human malaria parasite, can be taken as an index of its efficacy In this respect it has been shown that plasmochin in combination with small doses of quinine appears to have a much stronger parasitotropic action than either drug administered singly

Sarcoma with Gland Metastases—Oldham's case was one of undoubted sarcoma which had already invaded the glands The patient was alive and well eighteen months after operation The case is an example of glandular metastasis in sarcoma

Paris Medical

63 *437-472 (Dec 3) 1927*

Therapeutics in 1927 P Harvier—p 437
*Treatment of Hodgkin s Disease L Lortat Jacob and P Schmite—p 452
Chemotherapy of Septicemias E Vaucher and Uhrig—p 454
*Drainage of Gallbladder by Duodenal Intubation in Migraine Pasteur Vallery Radot and P Blamoutier—p 465
*Radiotherapy in Cerebral Tumors H Baruk—p 469

Treatment of Hodgkin's Disease—Lortat-Jacob and Schmite treated a patient with *Hodgkin's disease by injections of serum* taken from another patient with Hodgkin's disease, who had been treated by radiotherapy They injected 9 5 cc in ten days in a first series and 11 cc in ten days in a second series The erythrocytes increased in number from 2,800 000 to 4 300,000, while the leukocytes fell from 22 800 to 7 800, the *improvement* beginning after the first injection After the injections, radiotherapy was instituted, and after twenty-four treatments, the patient left the hospital apparently cured All functional disturbances had ceased, there was an increase of 12 Kg in weight, the glandular masses had disappeared and the blood formula was normal The authors also discuss the use of thorium X, benzol and arsenic in Hodgkin's disease

Drainage of Gallbladder by Duodenal Intubation in Migraine—Seven of twenty-two cases of migraine treated by Pasteur Vallery-Radot and Blamoutier by duodenal intubation were cured In these cases the vomitus was bilious and of a dark color The gallbladder was sensitive in most of the patients, except for a time after intubation

Indications for and Results of Radiotherapy in Cerebral Tumors—The cerebral tumors which are especially susceptible to the action of roentgen rays are gliomas and tumors of the pituitary Preliminary decompression to avoid intracranial hypertension is not absolutely *indispensable* when the tumor is extremely radiosensitive and there are no marked symptoms of hypertension, if the treatments are carefully measured

63 473 488 (Dec 10) 1927

Interpretation of Orthoradioscopic Images of Heart C Lian and G Guenaux—p 473
*Early Clinical Diagnosis of Typhus by Dry Cupping B Melconian—p 485

Early Clinical Diagnosis of Typhus by Dry Cupping—By the application of dry cupping glasses the exanthem of typhus may be *made* to appear before the fifth day, when it usually appears, and the disease is thus differentiated from recurrent fever, typhoid and pneumonia A more or less dark eruption bespeaks a severe attack

Presse Medicale, Paris

35 1505 1520 (Dec 10) 1927

*Blood Transfusion in Obstetrics Levy Solal and A T Tzanck—p 1505
Pluriglandular Heteroplastic Graft in Treatment of Endocrinopathie N Pende—p 1507
Muscular Activity and Circulatory Reactions L Binet—p 1507
Chronic Icterus from Obstruction of Choledochus by Stone L Ramond—p 1515
Marrubium in Extrasystolic Arrhythmia H Leclerc—p 1516

Blood Transfusion in Obstetrics—By means of blood transfusion Levy-Solal and Tzanck treated twenty-six cases, including six cases of postpartum hemorrhages, seven of hemorrhage following abortion, three of shock occurring about an hour after hemorrhage, three of placenta praevia, two of severe anemia of pregnancy, and five of extra-uterine pregnancy It is often necessary to replace the blood, amount for amount The authors do not use sodium citrate because large doses would be toxic The apparatus employed by them permits transfusion of pure blood in practically unlimited quantities as slowly as is desired The donor may be changed during the operation The technic is described and the apparatus illustrated

35 1553 1568 (Dec 21) 1927

*Prophylaxis of Hereditary Syphilis G Dujol and C Laurent—p 1553
Appendicular Colic Coproliths and Gangrenous Appendicitis G Metivet—p 1554
Whipple s Method in Treatment of Severe Anemias J Mouzon—p 1554

Prophylaxis of Congenital Syphilis—If clinical facts and serologic reaction indicate syphilis, treatment should be begun at the beginning of pregnancy The most efficacious and best tolerated treatment consists in intravenous injections of *arsenical salts Dujol and Laurent treated 213 women whose* previous pregnancies had resulted in about 26 per cent of children living three months, about 25 per cent born dead or dying before three months, 34 per cent of miscarriages and 15 per cent of macerated fetuses After energetic treatment with neoarsphenamine, these women, from 161 pregnancies, had about 92 per cent of children living at three months, about 5 per cent of stillbirths, 0 4 per cent of macerated fetuses and 2 5 per cent of miscarriages In the *treatment of the infants*, the authors use subcutaneous injections of a pentavalent arsenic preparation, of twenty-two children treated, twenty developed normally

Revue de Medecine, Paris

***44** 423 556 1927*

*Abnormal Forms of Pancreatic Cancer L Bouchut and P P Ravault—p 423
Amyotrophic Paralyses Following Serotherapy H Verger, E Aubertin and P Delmas Marsalet—p 4 1

Abnormal Forms of Pancreatic Cancer—*Bouchut* and Ravault present fifteen cases of pancreatic cancer some simulating gastric cancer, some icteric forms with abnormal onset some with a painful ectopic syndrome, some febrile forms and some metastatic forms In one case, the clinical diagnosis was cancer of the body of the pancreas and necropsy revealed cancer of the pancreas without involvement of the biliary tracts

Archivio Italiano di Chirurgia, Bologna

20 1 163 (Nov) 1927

*Intestinal Contents in Obstruction P L Badile —p 1
Arteriovenous Aneurysm F Fedeli —p 98
Strawberry Gallbladder N Piccaluga —p 125

Intestinal Contents in Experimental Obstruction —Experiments in dogs prove the resemblance of the phenomena developing after closed intestinal exclusion and spontaneous acute intestinal obstruction In these animals death is caused by the toxic microbic flora of the contents and not by the toxicity of the mucous secretion The normal anaerobic saprophytes of the intestine suddenly acquire virulence as their open environment becomes closed

Chirurgia degli Organi di Movimento, Bologna

11 539 625 (Nov) 1927

*Dislocation of Hip Joint V Putti and R Zanoli —p 539
Malleolar Fractures B Schiassi —p 575
Tumors of Cervical Spine M Camurati —p 581
Case of Dislocation of Hip Joint A Catterina —p 595
Osteotomy of Malleolus G Pieri —p 616

Treatment of Dislocation Caused by Infantile Acute Osteo-Arthritis in Hip Joint —In cases of osteomyelitic dislocation of the hip joint in childhood, nonsurgical treatment invariably fails, either totally or partially Of course, surgical steps must be deferred until the causative inflammatory process has cleared up In the fifteen cases reported, the immediate result was uniformly excellent In one case the reduction is perfect after eight and a half years, in five cases, after from one year to one and a half years, in others, conditions are promising but sufficient time has not elapsed for passing judgment In their last seven cases, Putti and Zanoli used plastic reconstruction of the femoral neck which they consider the operation of choice

Clinica Ostetrica, Rome

29 653 704 (Dec) 1927

*Preoperative Radium Treatment in Uterine Cancer F Patti —p 653
Cesarean Section at Term L Bini —p 675
New Forceps N Dallera —p 681

Preoperative Radium in Uterine Cancer —At the Catania Institute seventy cases of cancer of the uterus have been treated with radium, with or without previous exposure to roentgen rays In two cases, reported in full, clinical observation and microscopic examination of the lesions show that radium therapy may be followed by a complete clinical and anatomic cure Radium brings about both the disappearance of the carcinomatous cells and the sterilization of the field In threshold cases, preoperative radium therapy paves the way for total hysterectomy In pelvic metastases radium alone, followed by the knife, can secure results Sterilization by radium prevents infection and obviates the need of Mikulicz s drainage

Clinica Pediatrica, Modena

9 787 854 (Nov) 1927

Infant Mortality at Cagliari F Pinna —p 787
Insulin in Infant Malnutrition G Roi —p 823
*Insulin in Rickets G Roi —p 839

Use of Insulin in Treatment of Rickets —Of a group of children with rickets, six were treated with insulin alone, five with insulin and calcium lactate and nine with phosphorized oil The best and quickest results were in the group treated with insulin and calcium Insulin by itself had little effect

Gazzetta degli Ospedali e delle Cliniche, Milan

48 1177 1200 (Dec 11) 1927

*Diagnostic Sign in Latent Pulmonary Tuberculosis R Gaeta —p 1179

Diagnostic Sign in Latent Pulmonary Tuberculosis —In patients with latent pulmonary tuberculosis, complaining of "weakness ' loss of weight and "anemia " the sweat, especially in the axillae, has a marked formic acid odor The role of the skin in immunologic processes and its relation to internal secretions may explain this change in the secretion of the sweat glands Meyer noticed an increase of oxalic acid in the urine of tuberculous subjects As formic acid may be formed by the action of oxalic acid on glycerin it might derive from the fat capsule of the tubercle bacillus

Rassegna Internazionale di Clinica e Terapia, Naples

8 745 816 (Nov) 1927

*Malta Fever G Izar —p 750
Diagnosis of Hyperthyroidism G Marañon —p 762
Postoperative Jejunal Obstruction V Pauchet —p 766
Traumatic Hyperplastic Cellulodermatitis G G Perrando —p 770

Acriflavine in the Treatment of Malta Fever —In patients with Malta fever, the intravenous injection of acriflavine (0 01 Gm per kilogram of body weight) acted favorably on the course Two or three injections are usually necessary The effect on the fever was almost immediate The spleen and liver enlargement continued longer In addition to the bactericidal power of the drug, there may be some vaccinating action by the killed germs, as shown by the increased agglutinating power in the blood of treated patients In one case good results followed the use of small (0 20-0 30 Gm) enemas

Rivista di Clinica Pediatrica, Florence

25 769 856 (Nov) 1927

*Skin Test in Tuberculous Meningitis G Gelmi —p 769
Bilateral Deafness Following Poliomyelitis G Busacca and I Tomassini —p 780
Diphtheria Vaccination with Anatoxin G Sorge —p 791
Indoxyl in Urine of Children G Halfer —p 801
Pellagra in Children B Trambusti —p 809

Skin Test in Tuberculous Meningitis —In 123 out of 216 cases of tuberculous meningitis and miliary tuberculosis, Gelmi carried out the tuberculin skin test In 78 2 per cent it proved positive These figures are much higher than those usually accepted The cause may have been the patients, good general condition when taken ill, the comparatively early stage of the disease and the changed skin sensitiveness In four cases, the course of the disease was followed until death The skin reaction became negative in three of these two days before death On the other hand the intradermal reaction remained positive in two of the three cases

Progresos de la Clinica, Madrid

35 797 872 (Nov) 1927

*Prognosis in Pneumonia M Banuelos Garcia and J M Villacin Rebollo —p 797
Complications of Diabetes E Carrasco Cadenas —p 802
Insulin in Malnutrition E Carrasco Cadenas —p 805
Anatoxin in Diphtheria F Moreno de Vega y Soler —p 807
*Ossification and Growth F E Ortega —p 836

Bacterial Flora in Prognosis of Pneumonia —A study of twenty cases of pneumonia bears out the prognostic significance of the microbic association in the sputum If large numbers of streptococci and staphylococci are associated with pneumococci, the prognosis is most serious This factor exceeds in importance even the soil and the apical location of the process

Parathyroid Extract as a Factor in Ossification and Growth —Experiments on dogs and clinical tests in three little girls demonstrated that the parathyroid hormone is apparently an important agent in bone and body growth This is the treatment of choice in any case of retarded growth in which thyroid medication has brought the basal metabolism to normal but has left the growth disturbance uncorrected Doses of parathyroid extract should be very small and should be associated with oral administration of calcium lactate

Revista Medica Latino-Americana, Buenos Aires

13 1 226 (Oct) 1927

Right Ventricular Asystole R A Bullrich —p 31
Volkmann s Disease C Lugones —p 39
*Ascaris Eggs R Lorenzo E E Charle and E Astarloa —p 73
Reticulo Endothelial System M E Varela —p 98

Development of Ascaris Eggs —The outer albuminous membrane is not essential for the complete development of ascaris eggs In one case eggs lacking that protection were kept in a fecal medium and fifteen days afterward the membrane made its appearance Its absence is not, then, a sign of the eggs' sterility

Deutsches Archiv fur klinische Medizin, Leipzig

157 129 256 (Oct) 1927

*Lactic Acid Content of Blood in Disease of Liver A Adler and H Lange —p 129
Homogentisic Acid in Serum in Alkaptonuria. G Katsch and E Metz —p 143
Conduction by Normal and Diseased Lung of Rhythmic Sounds of Mouth Organ A Winkler —p 158
Metabolism During Incubation Period of Febrile and Nonfebrile Infections F Strieck and H E C Wilson Glasgow —p 173
Total Blood Mass Normally and in Disease S Rusznyak —p 186
Changes in Blood Serum Content on Basis of Determinations of Dry Substances Normally and in Diseases of the Liver and Pituitary J Kiss —p 202
Insulin and the Stomach E Wiechmann and W Gatzweiler —p 208
Hypoglycemic Reaction to Function Test with Glucose T Stenstrom —p 216
*Iodine and Goiter W H Jansen and F Robert —p 224

Lactic Acid Content of Blood in Disease of the Liver—Adler and Lange found the determination of the lactic acid content of blood in hepatic diseases of diagnostic and prognostic value In cases of jaundice, an increase above 30 mg is of serious prognostic significance In the differential diagnosis of obstructive jaundice, an increase in blood lactic acid is indicative of injury to the liver cells In the presence of carcinoma, such an increase indicates that metastases have formed In cholelithiasis and in carcinoma with icterus but without metastases the lactic acid values are normal Catarrhal icterus, with normal values, has a favorable prognosis In heart disease accompanied by marked hepatic stasis and cyanosis, the lactic acid of the blood is increased in amount

Iodine and Goiter—Jansen and Robert conclude that iodine plays a considerable role in the formation of the thyroid hormone and in its physiologic action This effect is qualitative rather than quantitative It is suggested that other substances, not related to iodine, also play a part in thyroid functioning

Deutsche Zeitschrift fur Chirurgie, Leipzig

207 1 304 (Dec) 1927

Homeotransplantation and Heterotransplantation of Organs with Special Attention to Vital Staining W Hoffmeister —p 1
Fat in Blood in Fractures K Flick and E Traum —p 16
Treatment of Surgical Tuberculosis A Oberniedermayr —p 22
Fate of Iodipin Injected into Joints Kobes and Militzer —p 42
Diathermy Bloodless Operations and Control of Bleeding K. Hutter —p 51
Electrolysis in Burns E Schneider —p 55
Diagnosis of Lymphadenitis by Inspection and Palpation W Schmidt —p 65
Traumatic Central Brain Hemorrhage F Reuter —p 92
Postoperative Tetany M Grasmann —p 102
*Preoperative and Postoperative Iodine Treatment of Exophthalmic Goiter F Schurer Waldheim and F Windholz —p 111
Plastic Operations After Removal of Breast R Kraft —p 171
Latent Injury to Liver in Surgery H Achelis —p 184
*Pathology and Symptoms of Duodenal Ulcer H Puhl —p 202
Effect of Penetrating Gastro Duodenal Ulcer on Internal Secretion of Pancreas H Stocker —p 249
*Fibrous Carcinoma of Stomach F Plettner —p 265
Isolated Polyposis of Duodenum and Upper Segment of Small Intestine R Gehrig —p 286
Transdiaphragmatic Simultaneous Injury of Abdominal and Thoracic Organs N Wryonis —p 295

Preoperative and Postoperative Iodine Treatment of Exophthalmic Goiter—On the basis of eighteen observed cases the authors conclude that an artificial remission can be produced through administration of iodine before and after operation This is manifested by disappearance of the nervous symptoms, such as palpitations, restlessness, sweats, tremor and diarrhea Simultaneously there is a lowering of basal metabolism at a rate of 3 per cent per day The operation is well tolerated after six or seven days of medication with compound solution of iodine Histologic studies demonstrate the effect of iodine on the morphologic structure of the gland Instead of proliferating hyperplastic forms, quiescent parenchymatous or colloid goiters are encountered Atrophy and degenerative changes in the epithelium were observed more rarely Lymphocytic infiltrations were noted A direct relationship between the degree of the morphologic changes and the clinical picture was not observed

Pathology and Symptoms of Duodenal Ulcer—The similarity between the duodenal and the gastric ulcer is pointed out by Puhl and the conclusion is drawn that the two represent the same disease with different localizations In 100 gastric resections, Puhl has found forty-nine duodenal and fifty-one gastric ulcers, in only two were both present From his own material and from that of other workers, it appears that in the male duodenal ulcer is slightly more frequent than gastric Both types of ulcer are less frequent in the female than in the male The symptoms, likewise, are milder in the female and the lesions show a greater tendency to spontaneous healing The ratio of gastric to duodenal ulcer in the female is 2 1 In roentgenologic studies, the niche demonstrated by Åkerlund is frequently seen in spite of the fact that duodenal ulcers are usually small In the absence of the niche, deformity of the duodenal bulb is the most characteristic sign At operation, duodenal ulcers of the anterior wall are recognized by hyperemia of the serosa or by a radiating scar When several such scars are present, a diverticulum-like deformity may be present When the existence of an ulcer cannot be clearly demonstrated at operation, it is wise to desist from further intervention Such a patient should be submitted to intensive medical treatment Even the demonstration of a niche is not necessarily an indication for an operation Operation is indicated in cases of large callous ulcers with markedly deformed bulb and with penetration into a neighboring organ But even these do occasionally heal under medical treatment

Fibrous Carcinoma of the Stomach—Plettner presents a clinical and histologic study of five cases of so-called linitis plastica of the stomach There is nothing characteristic or even suggestive in the history of the patient The symptoms were fullness in the epigastrium, pain, discomfort etc There were periods of amelioration and marked gain in weight The cases were of long duration, one of at least ten years Macroscopically, the stomachs exhibited partial or complete involvement with a marked thickening of the wall and shrinkage in size Microscopically, there was found an extensive sclerosing fibrosis, involving particularly the submucosa, but also the interstitial connective tissue of the muscular layers, with round cell infiltration, eosinophils and plasma cells Frequently no trace of carcinoma was at first evident and only a careful search revealed nests or cords of carcinomatous tissue Krompecher has differentiated a type which involves the pyloric portion only He considers this benign and refers to it as benign hypertrophy of the pylorus Linitis plastica involving all of the stomach is designated by him "carcinoma disseminatum" Konjetzny, on the other hand, is of the opinion that the genesis of the two is the same He interprets the marked fibrosis as an attempt at healing The excessive connective tissue chokes and destroys the cancer cells and thus, at least temporarily, arrests their growth He considers it possible that the benign pyloric hypertrophy of Krompecher is a healed fibrous carcinoma As a result of his own studies the author is inclined to accept Konjetzny s view that both are cases of "carcinoma fibrosum"

Frankfurter Zeitschrift fur Pathologie, Munich

35 375 574 1927

Comparative Study of Morphology of Tuberculosis in Man and Experimental Animals W Pagel —p 375
Struma Nodosa P Heilmann —p 401
*Ball Thrombi of Heart A W Goljajew —p 409
Primary Malignant New Growth of Hepatic Duct N I Wylegschanin —p 417
*Small Carcinomas of Small Intestine F Windholz —p 422
*Malignant Endocarditis Caused by Bacillus Pyocyaneus W Bungeler —p 428
Carcinoma of Esophagus with Giant Cells and Localized Areas of Necrosis of Fatty Tissue in Capsule of Mesenteric Lymph Nodes O Teutschlaender —p 436
Intramural Lymph Cyst of Uterus with Sarcoma in Its Wall E Wolff —p 441
Hypertrophic Cavernous Lymphangioma of Pancreas M N Sajewloschin —p 452
Papillary Nephritis A Kovacs —p 457
*Primary Sarcoma of Spleen F Fickenbusch —p 464
*Mortality of Atherosclerosis M Hesse —p 477
Suprarenal Hemorrhages K Kamniker —p 487
Pathology of Pituitary W Berblinger —p 497

Pathogenesis of Gastric Ulcer Value of Gastroscopy W Sternberg —p 525
Diffuse Hemangio Endothelioma of Liver K Neubürger and L Singer —p 543
*Are Lymph Nodes Primary Blood Filters? E A H Friedheim —p 549

Ball Thrombus of Heart—Goljajew relates the case of a woman, aged 48, who presented herself with general anasarca which had been present for three weeks Twenty-one years and seventeen years previously she had had a similar condition, but it disappeared The extremities were very cyanotic The area of heart dulness was increased considerably, to the right, it extended as far as the right nipple Heart sounds were faint The diagnosis was chronic myocarditis The patient died two days after admission At necropsy, the left ventricle was found to contain a free thrombus, 4 5 cm long and 3 2 cm broad The left auricle was almost filled by a thrombus that was firmly connected with the walls of the auricle This is said to be the twenty-fourth case of the kind on record

Small Carcinomas of Small Intestine—Windholz says that his case gives further proof of the derivation or origin of these tumors from the argentaffine cells of the intestinal mucosa There were twenty-six tumors varying in size from 1 to 12 mm Most of them were situated in the jejunum at the mesenteric margin

Malignant Endocarditis Caused by Bacillus Pyocyaneus—Bungeler relates the case of a man, aged 65, who had had erysipelas with endocarditis as a sequel Later, a mitral insufficiency developed Finally, because of a nervous disorder pyretotherapy was employed, a mixture of bacilli (components not stated) being injected to induce fever In a few days symptoms of malignant endocarditis were manifested Death resulted on the sixteenth day Bacteriologic examination of sections of the spleen disclosed *B proteus B pyocyaneus* and gram-positive cocci

Primary Sarcoma of Spleen—A case of primary round cell sarcoma of the spleen with metastases in the pleura a hemorrhagic pleural effusion and ascites is reported by Eickenbusch Few symptoms had been manifested before the splenic enlargement was noted

Mortality of Arteriosclerosis—Hesse analyzes 9 149 necropsies done during an eight-year period—between 1905 and 1912 —with reference to the mortality of arteriosclerosis There were 402 deaths from arteriosclerosis, the greatest number in any one year being seventy-seven, the lowest, thirty-seven In the same period there were 1,656 deaths from tuberculosis and 1,125 deaths from cancer Generalized arteriosclerosis and arteriosclerosis of the brain occurred most often, ninety-six and ninety-eight times, respectively, in a group of 256 cases analyzed with reference to localization The renal vessels were involved thirty-nine times, the heart, twenty-three times

Lymph Nodes as Blood Filters—Friedheim asserts that lymph nodes and organs are secondary blood filters The liver spleen and bone marrow are primary filters The subcutaneous connective tissue may, in certain states of irritation, become a primary filter

Munchener medizinische Wochenschrift, Munich

71 2045 2084 (Dec 2) 1927

Female Sex Hormone E Laqueur —p 2045
Observations in Competitive Athletics J Kaup P Gotthardt, E Hoferer and F Plate —p 2050
*Malaria Treatment of Tabes G Wullenweber —p 2056
Prevention of Tetanus S Heilbronn —p 2058
Seasickness L Fischer —p 2058
What is Nerve Massage? A Muller —p 2059
Infant Feeding L Langstein —p 2059 C cn
Physician s Thoughts on Medicine Eternal Verities A Bier —p 2062 C cn
Rules for Surgical Assistants E Sachs —p 2063

Properties of Female Sex Hormone—On large numbers of laboratory animals Laqueur tested the action of the female sex hormone on estrus, growth, the breast, metabolism, also its antimasculine action In at least 50 per cent of many thousand experiments, which included immature, senile and castrated animals injection of an aqueous solution of this hormone, containing a minimal amount of dry substance produced ovulation Growth of the genital organs, with the exception of the ovary, was demonstrated in dogs and in rodents The dose adequate to cause growth was only one tenth of that necessary to induce estrus In the breast the enlargement affected only the secreting portions In the respiratory metabolism, the effect of the hormone was seen in a regular increase in the oxygen intake and decrease in the carbon dioxide output Three weeks' treatment resulted in retrogressive metamorphosis of testes, penis, prostate and seminal vesicles On discontinuance of the treatment, the organs regained their normal condition The question whether the primary effect was confined to the testes the changes in the other organs being secondary was not answered The hormone exerted no toxic effects even in large doses it was without influence on heart or respiration This female sex hormone is soluble in water it is dialyzable through collodion and parchment Its physical qualities are further discussed

Malaria Treatment of Tabes—Thirty unselected cases of tabes were treated with malaria by Wullenweber Clinical improvement was obtained in 87 per cent improvement in the reactions of the cerebrospinal fluid in 82 per cent There were two deaths with symptoms of vasomotor collapse In consideration of the relatively good prognosis as to life for tabetic patients as compared with general paralytics malaria treatment is justified in the first named he believes only in strong persons, without pronounced aortitis obesity or hypertonia The two fatal cases in this series were complicated by aortitis The gastric crises and lancinating pains in the lower extremities which form the chief indications for malaria therapy may be temporarily exacerbated by the fever to such an extent that the treatment can be continued only under an opiate

Treatment of Seasickness—Fischer thinks that the direction of the motion of the lymph in the vestibular apparatus is the decisive factor in seasickness horizontal motion is well borne, while vertical motion causes typical discomfort The best results seemed to be obtained with the patient prone and the head turned to one side so that the ship s motion was chiefly transferred to the lymph in the horizontal and the posterior vertical semicircular canals The motion of the ship and the direction of the berth in relation to the ship have to be considered in selecting the suitable positions

Zentralblatt fur Gynakologie, Leipzig

51 3097 3160 (Dec 3) 1927

Hematinemia Especially in Extra Uterine Pregnancy G Haselhorst —p 3098
History of Obstetric Lever F C Wille —p 3103
Surgical Treatment of So Called Posterior Parametritis N Louros —p 3109
*Famine and Uterine Prolapse M Magid —p 3111
Treatment of Carcinoma of Uterus with Acetone and Radium G Gellhorn —p 3114
Deviation of Uterus and Prevention of Perineal Laceration D von Ott —p 3117
Birth of Full Term Child Through Central Perineal Tear M Kailo —p 3120

Hematinemia in Extra-Uterine Pregnancy—From observations in fifty-three cases of abdominal pregnancy Haselhorst concludes that hematin is spectroscopically demonstrable in the circulating blood in a little less than one third of all disturbed extra-uterine pregnancies and in about one half of all tubal abortions of protracted course

Famine and Uterine Prolapse—Writing from Kiev Magid reports that the percentage of uterine prolapse among the refugees from the famine-stricken provinces in 1921 1922 was more than four times as great as that among the native inhabitants from 1919-1926 He regards lack of food as a contributing cause

Nederlandsch Tijdschrift v Geneeskunde, Amsterdam

71 2025 2128 (Nov 12) 1927 Partial Index

*Inherited Degeneration of the Macula Lutea Associated with Color Blindness K T A Halbertsma —p 2036
Induced Psychoses H J Schim van der Loeff and J A J Barnhoorn —p 2069
Case of Parkinsonism After Typhoid C G Nagtegaal —p 2079

Inherited Degeneration of the Macula Lutea Associated with Color Blindness—Halbertsma presents a family tree in which the male founder was afflicted with color blindness and degeneration of the retina Of nine children, one was similarly affected and two had color blindness alone In the third generation, consisting of fourteen persons, two had color blindness and retinal degeneration, two color blindness alone Of the thirty-one descendants in the fourth generation, three presented color blindness and retinal degeneration, two color blindness alone Only males were affected The retinal degeneration was symmetrical, was mainly limited to the macular region, and appeared in early life

71 2129 2224 (Nov 19) 1927 Partial Index

*Radiotherapy of Uterine Cancer and Infection D den Hoed —p 2132
Histopathologic and Histochemical Examinations in a Case of Juvenile Amaurotic Dementia A Querido —p 2140
*Psychic Infection and External Influence in Neuroses and Neuro psychoses H Breukink —p 2151
Agranulocytosis W C Haverkamp —p 2158
Bilateral Cysts of Nostril P Plantenga —p 2159

Radiotherapy of Uterine Cancer and Infection —Two deaths, from sepsis and peritonitis, respectively, following radium treatment of inoperable carcinomas of the uterus called den Hoed s attention to the influence of irradiation in spreading the secondary infection usual in uterine carcinoma or in lighting up an old pelvic infection The traumatization of the tissues incident to insertion of the radium, especially within the cervix, the traumatization from the rays themselves and the local and general lowering of resistance are all possible factors in a spread of the local infection Before irradiation, he now carries out Philipp s virulence test, to determine the bactericidal power of the patient s blood in relation to the flora actually present in the vagina Patients with hemolytic streptococci in the vagina and without a corresponding bactericide in the blood are not treated with radium until the bactericidal power of the blood is reestablished, treatment with roentgen rays is similarly delayed or is begun very cautiously The same method is followed with patients with large numbers of hemolytic streptococci and with bacterical power in the blood This system has been followed in nineteen cases and serious complications following radiotherapy have been absent

Psychic Infection and External Influences in Neuroses and Neuropsychoses —The cause of neurosis, Breukink states, lies in being a good listener" i e in depending on what other people say Therefore, the best therapy is no medicine, no advice and no prescribed regimen The cardinal point in all neuroses is a feeling of inferiority So long as a patient with uncomplicated neurosis does anything or omits doing anything on account of any symptom he remains bound to his illness Self dependence is the one aim to be sought Breukink blames external influences The sufferer from a neurosis does not, he affirms, seek escape in his illness, as Freud says, he is pushed into it by external causes

71 2225 2320 (Nov 26) 1927 Partial Index

*Glycosuria Diabetes Mellitus and Pregnancy H P A Smit —p 2226
Digitalis and Digitalis Preparations J S Meulenhoff —p 2232
Disease of Peripheral Portion of Ninth Tenth Eleventh and Twelfth Left Cranial Nerves After Injury from Blunt Trauma D Brocx —p 2240

Glycosuria, Diabetes Mellitus and Pregnancy —The glycosuria which is a temporary phenomenon in about 10 per cent of pregnant women must not be confused with diabetes Smit reports a case of grave diabetes in which the patient passed safely through a first pregnancy and was delivered spontaneously one month before term The puerperium was undisturbed Nearly two years later, at the time of writing the patient was in the sixth month of a second pregnancy, and was standing it well During this pregnancy in contrast to the first, she has been under continuous observation and treatment with insulin

Hospitalstidende, Copenhagen

70 1081 1104 (Nov 17) 1927

Ellermann s Method for Staining Granules S Petri —p 1090
*Acute Diseases of Pancreas O Mikkelsen —p 1095 C td

70 1105 1130 (Nov 24) 1927

*Acute Diseases of Pancreas O Mikkelsen —p 1105 C tn

70 1131 1154 (Dec 1) 1927

*Acute Diseases of Pancreas O Mikkelsen —p 1131 C cn
Results of Herniotomy in Inguinal Hernias in Men J P Jensen —p 1145

Acute Diseases of the Pancreas —Mikkelsen reviews seventy-three cases of acute and subacute recurring disease of the pancreas He asserts that urinary diastase of 150 or more always points to the presence of pancreatic disease In the last two years determination of the diastase in the urine (Fabricius-Møller) was made in all cases A positive diastase reaction is considered an excellent diagnostic supplement to the clinical symptoms in all cases and of particular value in difficult diagnosis in the milder acute or subacute cases He believes tenderness in the epigastric region, in the midian line or slightly to the left, is a highly important symptom, almost always present in acute disorders of the pancreas Rise in temperature does not preclude acute pancreatic disease He maintains that an acute disease of the pancreas does not of itself indicate operation Operative treatment is indicated in case of complication (abscess or peritonitis) or of diagnosed underlying cholelithiasis but not until the pain has subsided Cases from his material are reported in support of his standpoint

CORRECTIONS

Liver Extract in Toxemias of Pregnancy —In the *Atlantic Medical Journal,* December, 1927, page 141, is published an article by Harold A Miller and D B Martinez, entitled "Liver Extract in the Toxemias of Pregnancy" The paper was abstracted in The Journal, February 4, page 417, but apparently the abstract was misleading and confusing It was headed the same as the original article but in the body of the abstract liver diet is mentioned Therefore, the following abstract is submitted as a substitute

An increasing suspicion that the liver necrosis found at autopsy had more than a passing significance, a feeling that the detoxicating function of the liver was essential to pregnant women, and a hope that this neutralizing substance, whatever it may be, could be supplied, led the authors to try the use of liver extract (heparmone) in the treatment of eclamptic and preeclamptic women Their series now consists of 107 preeclamptic cases divided roughly into mild, moderate and severe, with fifteen cases of eclampsia (no eclamptic patient had heparmone prior to convulsions) Thoroughly to test the efficiency of heparmone they permitted all patients to continue their usual diet, and limited their activities only to the point consistent with pregnancy in the normal woman Heparmone, used to the point of neutralization was always followed by improvement, and left but little to be desired Hence, the infrequency of symptomatic or supplementary medication The ready control of convulsions, marked reduction of blood pressure in the true uncomplicated eclamptic, rapidity with which coma has disappeared, hourly increase of urinary output (self retaining catheter always inserted), and equally marked improvement in all other symptoms has enabled the eclamptic to continue until the beginning of labor This series, consisting of eclamptic and preeclamptic cases, is not considered as final proof of the value of heparmone, but the fact remains that no preeclamptic woman developed convulsions even though complicated by a preconceptional nephritis, and fourteen consecutive patients with eclampsia recovered, except one who had convulsions for five days before treatment and was moribund when first seen Every case seems to have a neutralizing dose which relieves all symptoms, except that in the nephritis cases the blood pressure remains at the level consistent with the previous pressure of the individual but convulsions do not occur, and all cases have been allowed to continue their pregnancy All cases in convulsions when first seen have been successfully treated and interference avoided"

Cholin as a Possible Suprarenal Hormone —In The Journal, January 14, p 156, appears an abstract from the Santa-Fe Medico Rosario de Santa Fe, entitled "Colin as a Possible Suprarenal Hormone" The word 'colin" should read "cholin"

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END-RESULTS FROM THE SURGICAL TREATMENT OF HYPERTHYROIDISM *

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Careful preoperative preparation, fractional operations and perfection of operative technic in the surgical treatment of hyperthyroidism have so minimized the operative risk that consideration of mortality statistics no longer holds any significance The occasional death is usually an unavoidable circumstance encountered by the surgeon in endeavoring to save a patient who has been "carried along" by ill advised conservation until he has passed the stage of operability—a statement justified when it is remembered that every patient with hyperthyroidism has been at one stage of the disease a perfectly safe operative risk Mortalities, therefore, are due not to the operation but to the lack of operation The time has arrived when attention should be focused on the morbidity statistics of "goiter surgery" What are the end-results of the surgical treatment of hyperthyroidism? Does operation offer a sufficient guarantee of cure, increase of life expectancy, and relief of disabling symptoms to justify its routine application as the method of choice in the treatment of toxic goiter? Every surgeon who deals with the goiter problem has, from personal observation, become convinced of the gratifying results usually obtained, but it is surprising how little is actually known of the end-results It was to determine with some degree of accuracy the postoperative status and degree of rehabilitation to be expected that the present study was made

While recognizing that the residual effects of hyperthyroidism are fundamentally the same, whether produced by the hyperplastic toxic (exophthalmic) goiter or the toxic adenoma, it has seemed most convenient for the present study to consider them separately Especially is this factor of importance when one is considering the end-results as compared with the duration of the disease or the age of the patient The present study is based on a recent series of 146 cases which have been thoroughly followed This group is composed of 100 hyperplastic toxic cases and forty-six toxic adenomas

INCIDENCE

In the hyperplastic toxic group the incidence of males to females was 1 4, the average age was 36 years (the youngest being 16 and the oldest 60 years), and the average duration of symptoms was sixteen months

In the toxic adenoma group the sex incidence was 1 15, the average age was 43 years (the youngest being 21 years and the oldest 67 years), the average duration of the goiter was fourteen and one-half years, and the average duration of toxic symptoms was twenty months

Some of these figures deserve attention In the first place, the average age of onset in the hyperplastic toxic group is, at least in this community, about a decade later than is usually recognized The average age of toxic symptoms, 16 months in the hyperplastic toxic group and 20 months in the adenomatous group, furnishes a concrete demonstration of the delay that usually occurs before the patient is sent to the surgeon This delay, which is now twice as long as was observed five years ago, has no doubt been produced by a confused conception of the value of iodine medication In a recent publication, we have predicted that this factor will probably tend to increase the operative mortality during the next few years We will try to show in the present paper that it likewise directly influences the final operative result, i e, that there is a directly proportional relation between the duration of the disease and the degree of rehabilitation

OPERATION

Of course, the type of operation must have as its ultimate purpose removal of as much of the diseased gland as possible, just enough thyroid tissue being left to satisfy the normal requirements of the patient, i e, a subtotal thyroidectomy To reach this point, however, it is often necessary, because of the operative hazard, to divide the operation into two or more stages A few years ago, preoperative iodine medication so improved the toxic patient that many of the multiple stage procedures were discarded Now, however, indiscriminate and prolonged medication by the practitioner has to a large extent deprived the surgeon of this safeguard, and we have again been forced to operate in an increasing number of cases by the fractional method It is to be hoped that the practitioner will soon become convinced, not only of the uselessness of iodine as a form of medical treatment of hyperthyroidism, but also of the ultimate harmful influence it will produce We have failed to see in this clinic a single case of hyperthyroidism in which permanent benefit resulted from the administration of iodine

As a preoperative adjunct, iodine is a most useful agent both in the hyperplastic toxic and in the toxic adenoma, the only difference noted being one of degree In the hyperplastic cases, the average fall of basal metabolism during the preoperative interval has been 50 per cent, while in the toxic adenoma it has been

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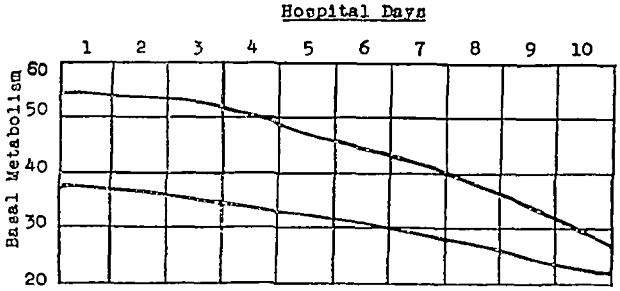
* From the Thyroid Clinic of the University Hospital

40 per cent, as shown in the accompanying chart This slight variation may be explained by the more complete nervous relaxation of the exophthalmic patient It is realized that this response to iodine in the toxic adenoma is at variance with that reported by many observers in the Middle West The only explanation we can offer is that there may be some difference in the pathologic physiology of the toxic adenoma in various regions Certain it is that the effect observed in this clinic has been of the same nature in the two types of hyperthyroidism

Of the patients studied 81 3 per cent were operated on in one stage, 16 per cent in two stages, and 2 7 per cent in three stages Preliminary ligation except as a "trial operation" has been practically discarded The two stage operation, consisting of the removal of one lobe followed by the removal of the opposite lobe after an interval of eight weeks, has proved so satisfactory both in the reduction of immediate severe reaction and in the ultimate recovery that we are using it with increasing frequency A statement in the recent literature by a prominent surgeon that he has "never deliberately planned multiple operations' requires no comment, as in the same article he admits not having had any experience with them



Comparative decline of basal metabolism in hyperplastic toxic goiter and toxic adenoma upper line hyperplastic toxic goiter lower line toxic adenoma

END-RESULTS

In this clinic it is our practice to follow all patients who have been operated on for at least five years As far as possible this is done by personal examination, although patients who live at a considerable distance from the clinic are seen less often than those near at hand, letters or examination by the family physicians being substituted In a general way, we have attempted to examine or receive a detailed report from every patient four times during the first year (at one month, three month, six month and twelve month intervals), twice during the second year and once each year thereafter Basal metabolic estimations are made at frequent intervals, and, whenever any doubt exists concerning the patient's rating, this estimation is always made before classifying the patient

Bearing in mind that the final result of any form of therapeutics must be judged according to the anatomic, symptomatic and economic status of the patient, we have classified the cases as follows

Group 1 Patients who are entirely well

Group 2 Patients in whom certain symptoms persist, such as residual nervous symptoms, palpitation, inaptitude and exophthalmos, but who are entirely relieved of all traces of hyperthyroidism and who carry on their usual affairs of life as well as they did before hyperthyroidism developed Of course, the basal rate of this group must be normal

Group 3 Patients who are entirely relieved of their hyper thyroidism but who are seriously handicapped by certain visceral changes produced by the disease This, of course, includes the "thyrocardiacs," and the malnourished and prematurely senile groups

Group 4 Patients in whom the symptoms of hyperthyroidism were unrelieved by operation—those with so called continuous hyperthyroidism

Group 5 Patients who were apparently well for some time following operation but who now have a definite recurrence

Table 1—*End-Results in Hyperplastic Toxic Cases*

	Patients	
	Number	Per Cent
Group 1	71	71
Group 2	19	19
Group 3	6	6
Group 4	1	1
Group 5	4	4

Table 2—*End-Results in Toxic Adenoma*

	Patients	
	Number	Per Cent
Group 1	39	87
Group 2	4	8 7
Group 3	2	4 3
Group 4	0	0
Group 5	0	0

It is obvious that the cases falling into the first three groups are operative successes, while those in the last two groups have been operative failures

The present status of the hyperplastic toxic cases is shown in table 1, that of the cases of toxic adenoma in table 2 These ratings are based on an average postoperative interval of ten months The rating of both types is shown in table 3 A recapitulation of the final rating of both types is shown in table 4, in which all patients in groups 1, 2 and 3, i e, those relieved of hyperthyroidism, are considered as operative successes, while those in groups 4 and 5 are considered as operative failures

A detailed study of the patients in each group is of interest As has been previously stated, all those in group 1 are considered entirely well They have been completely restored to their usual health, are engaged in their usual occupations, and, when examined, fail to show any residual effects of the disease In fact many patients who, before operation, were considered to have permanent visceral injury have entirely recovered and have entered group 1 This group contains 75 per cent of the cases

Table 3—*End-Results in All Types*

	Patients	
	Number	Per Cent
Group 1	110	75 3
Group 2	23	15 8
Group 3	8	5 5
Group 4	1	7
Group 5	4	2 7

Table 4—*End-Results*

	Patients	
	Number	Per Cent
1 Operative success relieved of hyperthyroidism	141	96 6
2 *Operative failures recurrence* or continuous hyperthyroidism	5	3 4

Group 2, comprising patients with mild residual symptoms, contains twenty-three patients, or 15 8 per cent of the entire number In view of the general systemic effect of the disease, it seems only natural that certain systems of the body will not completely readjust themselves after removal of the cause, and it is of course probable that certain as yet unexplained organic changes have occurred in these patients that make complete restoration impossible This, however, cannot be construed as an argument against operation, any more than abdominal adhesions can be an argument against operative intervention in suppurative appendicitis, or residual gastritis can contraindicate the removal of an offending gallbladder In the present series, the number in this group has been augmented to some extent by a few patients who are receiving a permanent disability allowance from the United States Veterans' Bureau It has been our experience that these patients will seldom admit that they have been entirely cured from any malady

Group 3 contains those patients who have been relieved of the hyperthyroidism but who are definitely and permanently handicapped It contains eight patients who, before operation, have shown signs of marked visceral injury, and includes those with organic cardiac damage The disability in six of these patients is due to cardiac injury, postoperative hypothyroidism is responsible for disability in one and mild tetany in another In the latter patient, parathyroid injury was unavoidable She was an extremely bad operative risk, and was subjected to a total thyroidectomy with the knowledge that continuous postoperative glandular therapy would be necessary Relief of hyperthyroidism in this group and the arrest of visceral degeneration constitute a satisfactory result Rehabilitation is not expected In every case, however, considerable improvement has occurred, and, as a matter of fact, we have never seen a patient when relieved of hyperthyroidism, regardless of the stage of the disease, whose general condition has not been improved As previously mentioned, patients in this apparently permanently handicapped group often improve to such an extent that they finally enter groups 2 or 1

Groups 4 and 5 comprise the patients with definite recurrences They are listed as operative failures, although it is known that reoperation removes them from this group However, as far as the initial therapeutic procedure is concerned, they have not been cured and are so listed To state that operative failure does not occur is either a deliberate avoidance of the evidence or a confession that the patients were not followed We have seen and operated again on patients who were originally operated on in many other goiter clinics, and surgeons in other clinics have no doubt reoperated in some of our cases The present series includes five cases (3 4 per cent) in which there have been definite recurrences

It is beyond the scope of this article to advance definite reasons or theories to account for recurrence Failure to remove enough of the diseased gland is the obvious cause and is, no doubt, responsible in most instances This factor certainly accounts for continuous hyperthyroidism, but there are many cases in which a considerable interval of time, from six months to a year or more, elapses before there is a recurrence In these cases one is forced to consider other factors, chief among which is that the underlying cause of the original hyperplasia may have recurred, with a resulting secondary hyperthyroidism Since, however, so little is known concerning the real cause of hyperthyroidism, it is useless to attempt conclusions, the premises of which are uncertain The treatment for recurrence is, of course, reoperation

To return again to the final rating (table 3), it is seen that a considerable number of patients relieved of hyperthyroidism are not entirely well (groups 2 and 3) Can anything be done to reduce this number? From our observations we have always noted that better results are obtained in the financially comfortable patients than in those of the poorer classes, because of the fact that they are better situated to carry out a rational plan of convalescence A rest period of at least one month and preferably three months is always advised as a postoperative routine During the past year, an attempt has been made to extend this plan to include every patient An experienced social service worker has been added to the personnel of the clinic The social status of all patients is investigated They are advised in detail concerning their convalescence and, when home surroundings do not permit of adequate care, the patients are placed in convalescent homes, where they are under the direct care of the social service department It is too early to evaluate the result of this procedure, but if the number of patients in groups 2 and 3 (21 per cent) can be reduced it will be considered successful

Does the duration of hyperthyroidism have any effect on the operative result? All observers must agree that it does, and the series of cases here presented confirm this observation The average duration of thyrotoxicosis in the patients in group 1 was sixteen months and that of the patients in groups 2 and 3, twenty months On the other hand, permanent disability has not occurred in any patient in whom the duration of the disease was three months or less

When all the facts concerning hyperthyroidism are considered—the natural course of the disease, the imminent danger of incurring permanent visceral injury, the absolute lack of any specific or nonspecific medical measures that can be relied on to alter its course, the low mortality from operation and the ultimate operative result to be expected—it is almost inconceivable that a large proportion of the medical profession continue to follow a plan of procrastination that denies prompt treatment to patients suffering from hyperthyroidism

CONCLUSIONS

1 Operative treatment of hyperthyroidism offers a chance for recovery from thyrotoxicosis in about 96 per cent of cases

2 Complete restitution can be expected in 75 per cent of cases

3 About 15 per cent will have mild residual symptoms

4 About 5 per cent will be permanently handicapped

5 About 3 or 4 per cent will have recurrences

6 The degree of disability is proportional to the duration of the disease

7 Early operation will prevent the occurrence of permanent disability

133 South Thirty-Sixth Street

Study of Anatomy and Physiology—Since little could be known about abnormalities in structure and function until more was known about the normal state, it was only natural that physicians should have been led into the study of anatomy and physiology It cannot be maintained that this knowledge was pursued solely for the sake of curing disease, but the pursuit of this knowledge originated in, and was practically confined to, the medical schools and the search was almost exclusively conducted by physicians—Cole, Rufus *Science* **67** 48 (Jan 20) 1928

THE EARLIER DIAGNOSIS OF MEASLES *

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NEW YORK

The importance of making an early diagnosis in a case of measles is well known It is generally understood that measles is most contagious in its early stages, and therefore that early diagnosis and isolation are necessary to hold down the spread of the disease But it is not so well known that measles may often be predicted with some confidence before the appearance of Koplik spots the first pathognomonic sign, that measles is usually highly contagious from one to two days before the appearance of Koplik spots, and that the course and particularly the complications of measles are apt to be milder if the patient is put to bed and individually isolated at the very onset of the fever Furthermore, New York City for the past ten or twelve years has had biennial waves of measles (fig 1) From three to six times as many cases have occurred on alternate years as during the intervening winters Last winter was an unusually light season for measles This winter accordingly promises to be a heavy one with possibly ten times as many cases as last year As there is no pathognomonic cellular reaction in measles, or histopathologic means of diagnosis, at any time in the disease, one must rely on clinical evidence only for diagnosis It would therefore seem advisable once again to emphasize the familiar details in the early clinical diagnosis of measles, and also, if possible, to suggest new or less well known features, the finding of which might further still earlier recognition of the presence of the disease

The symptoms of measles are quite variable in their duration, severity and time relationship However, many cases run exactly true to a type, and many more run nearly so Four stages of the disease are usually recognized not separated by any sharp line of demarcation, but gradually merging These are (1) the period of incubation with duration of from seven to fourteen days, (2) the period of invasion, or prodromal stage of catarrh, lasting from three to four days, (3) the period of eruption, or fastigium, lasting from three to five days and (4) the period of convalescence with desquamation, lasting about a week As this paper has to do only with the early diagnosis the discussion will not go beyond the first two periods into the stage of the eruption, or fastigium

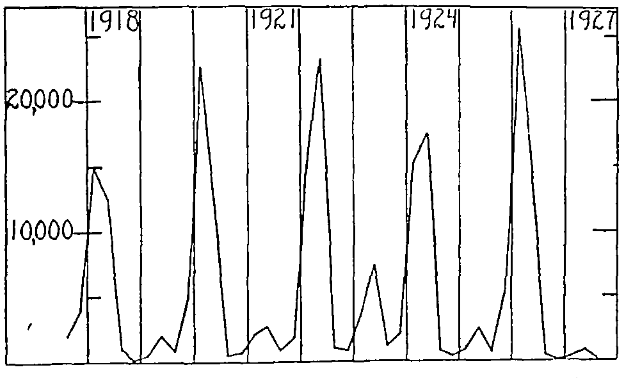

Fig 1 —The biennial periodicity of measles in New York City during the past ten years The incidence is charted in periods of three months or quarters

From exposure to the onset of the first symptom of the disease—usually fever—is the period of incubation This averages fairly close to ten days, with only rare cases falling outside the seven to fourteen day or second week limit The duration varies with the virulence of the organism and the resistance of the patient, the more severe cases usually showing the shorter incubation periods

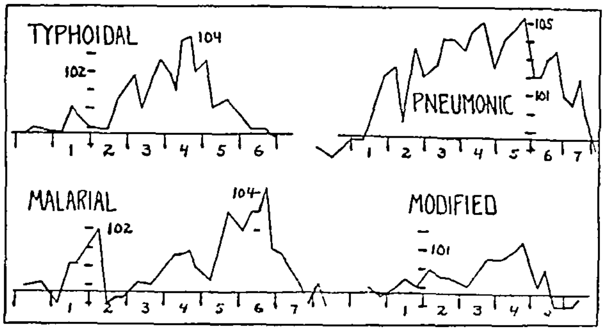

Fig 2 —The usual forms of fever curves in uncomplicated measles named according to the type of rise

This period of incubation is customarily without any appreciable symptoms of ill health, but during the last half of this period there may be found a temporary loss of weight, averaging from 5 to 6 ounces (140 to 170 Gm) and usually less in the mild or modified cases The blood may early show a slight leukocytosis lasting to the middle of the period of incubation, and followed by a more definite lymphocytic leukopenia toward the end of this period

The second stage, the period of invasion or of catarrh, is from the onset of the first evidence of ill health, usually fever, to the onset of the exanthem, or rash in the skin, and lasts usually from three to four days, with only very exceptional cases outside a one to seven day limit If the patient is under observation during this stage a diagnosis of measles should be made or suspected almost without exception, and suitable treatment instituted

Fever, in the great majority of cases is the first evidence of ill health (fig 2) It usually falls into one of four more or less distinct types (*a*) Usually there is the typhoid type of rise, the temperature rising in from four to five days by daily increase to a maximum of nearly 104 F at the time of the full bloom of the rash (*b*) In the malarial type of rise there is a day or two of more or less fever with a return to normal or nearly normal for a few hours and then a quick rise in two or three days to the maximum with the eruption (*c*) In the severe cases the fever is apt to rise quickly at the start to 103 F or more and hover around 104 until the rash has well appeared This may be called the pneumonic type (*d*) The fourth type is found in mild or so-called modified cases, as in infants of 4 or 5 months possessing still some inherited immunity albeit not much, or in children who have been given the blood of convalescent patients in doses insufficient to afford complete protection but enough to mitigate the symptoms of the disease Here the fever may not go over 101 or 102 and is gradual in rise and fall

No matter what the type of rise of fever, the fall is usually by crisis or rapid lysis, the temperature dropping to normal very quickly, once the rash is well out

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* From the Department of Pediatrics of Cornell University Medical College.

* Read before the Pediatrics Section of the New York Academy of Medicine Nov 10 1927

Should the fever fail to clear up in this manner and at this time, the presence of some complication, particularly a secondary infection, should be presupposed, and its situation looked for

Following the onset of fever, a slight puffiness of the lower eyelids may be noticeable, and there may also be found a fairly definite line of congestion across each lower lid, about at the margin of the tarsal cartilage and perhaps a third of the way from the lid margin to the fornix (fig 4) In ten children in whom I have observed what I thought was a typical measles line of this sort in the eye and have prognosticated the disease at this stage, it subsequently became manifest in eight In six of the ten, five successes and one failure, I was aided by a history of previous exposure to the disease But in three of the four cases in which such a history was lacking, the guess of the presence of measles proved to be correct This so-called measles line must be quite marked to be suggestive Children ill with other catarrhal conditions may show a linear conjunctivitis just inside the blepharal margin of the lower lid, and, furthermore, too forceful retraction of a normal lower lid may cause blanching in such a manner as to leave a linear ridge of redness at the tarsal margin The measles line is best seen for the first time in a child in whose case there is a history of a known exposure to the disease some ten days before the day of examination and who has that day or the day before shown the first slight elevation of temperature above normal Its duration as a line is quite brief as a rule, the injection spreading in a day or so to involve the entire peripheral conjunctiva and later the palpebral conjunctiva also But in one patient, an 11 year old boy, this line and fever were the only features for two days before the other symptoms of measles became manifest

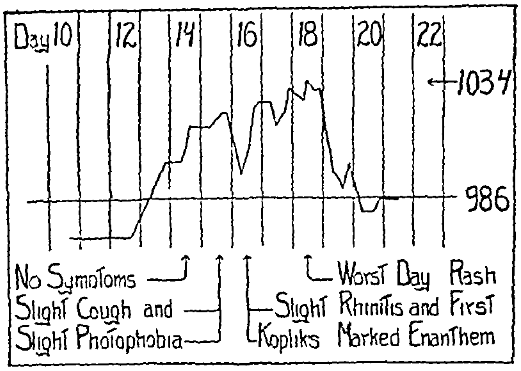

Fig 3 —Temperature in measles in a girl aged 14 years illustrating the priority of fever as a symptom On the first day brother suffered from malaise and on the fourth day showed a rash

When this line has been obscured by the more general conjunctivitis, puffiness of the lids becomes marked and there is usually a seropurulent exudation with considerable photophobia The caruncle at the inner corner of the eye becomes swollen, and occasionally there can be found thereon two or three tiny elevated bluish white spots, possibly similar in nature to the buccal spots, popularized by Koplik

Occasionally there may be found, particularly on the chest and neck, a prodromal eruption occurring during the first day or two of the fever This rash (fig 6) may consist of fine macules somewhat resembling the rose spots of typhoid, or it may be a blotchy erythema, or it may resemble quite closely the diffuse erythema of scarlet fever The eruption usually is very short lived, disappearing before the onset of the typical exanthem of measles It is of importance, however, in obscuring an early diagnosis In one patient, a young clinic secretary, it took the form of a diffuse erythema across the neck and shoulders and, with fever and headache, comprised the essential features of the day of onset This rash was gone the third day, when Koplik's spots appeared, making the diagnosis certain The measles line in the eyes was not looked for

Usually about the second day of fever, the enanthem appears on the soft palate, the uvula, the tonsils or the posterior pharyngeal wall It begins as a slight injection, together with a number of scattered reddish brown spots possibly the size of a pinhead The congestion becomes more marked and the spots themselves become more numerous and possibly confluent, so that by the fourth or fifth day the pharynx may be markedly congested and irregularly brownish red Numerous tiny opalescent miliary vesicles may be seen when there is considerable involvement of the pharynx This enanthem usually lasts until the eruption on the skin is well marked, and it fades as the fever in uncomplicated cases returns to normal Profuse involvement of the pharynx may be accompanied by pain, especially on swallowing

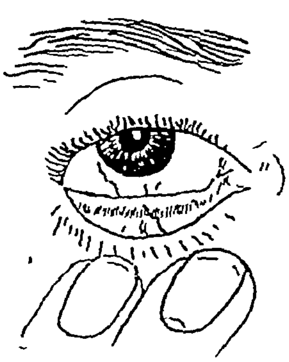

Fig 4 —The so-called measles line a new sign believed not previously described and appearing usually shortly after the onset of fever

There next appear in the average case the clinical manifestations of catarrh, to wit, coryza and cough sometimes called with conjunctivitis the three C's These are due to the involvement of the mucous membranes of the eyes, nose, larynx, trachea and bronchi in the pathologic processes of measles

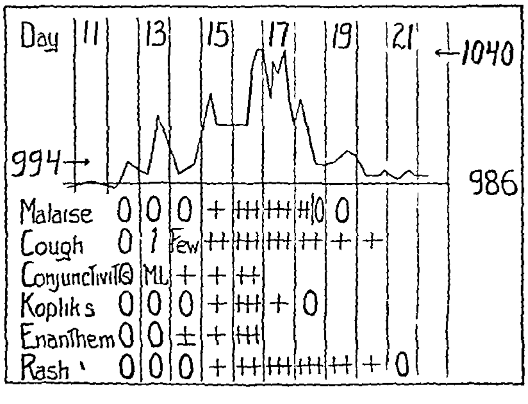

Fig 5 —Observations in a girl aged 8 years illustrating the priority of *fever as a symptom* and the relative time of appearance of the measles line (M L) On the third day sister had cough and next day a rash

The nasal catarrh is usually shown by premonitory sneezing followed by the usual manifestations of profuse coryza or rhinitis The cough of measles is a frequent nonproductive, irritating cough due to the inflammation of the mucous membrane of the larynx and trachea In fact, a certain amount of bronchitis is to be considered part of any case of measles rather than a complication

These manifestations of catarrh, coryza, cough and conjunctivitis usually reach maximum severity about the end of the period of invasion when the fever is at its height and the exanthem is beginning to appear. They then usually clear up even more rapidly than they appear, with the exception of the cough, which is apt to persist into convalescence.

Koplik's spots comprise the first pathognomonic sign of measles. When marked, these spots resemble grains of white pepper loosely sprinkled on a red background. They first appear, usually on the second or third day of the disease, as small red patches in the center of which is a tiny opalescent whitish speck, much smaller than a pinhead. They are usually first found in the mucous membrane on the inside of the cheek about opposite the first molar teeth, but as they become more numerous they may be found all over the inside of the cheeks and in marked cases on the mucous membranes of the gums and lips. They have also been reported in nasal and vaginal mucous membranes as well as on the inner caruncle of the eye. When marked, they are usually seen in any light, and the patient may speak of the mucous membrane of the cheek as feeling rough to the tongue. When few or fading or just appearing they are best seen in strong daylight, and occasionally cannot be seen at all by artificial light. They usually disappear as the exanthem appears, and are found when looked for in about 90 per cent of cases of measles.

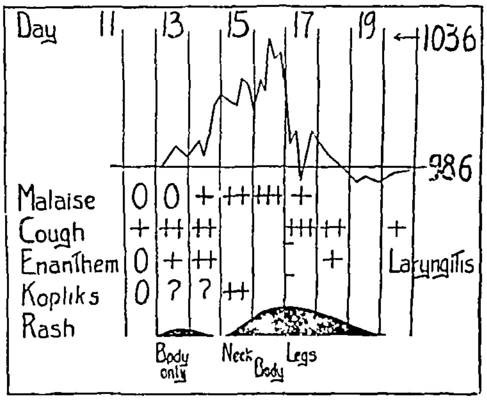

Fig. 6.—Observations in a woman aged 36 illustrating nonconformity in an adult to the rule of priority of fever, also a prodromal rash. This patient was the mother of the patient recorded in figure 5. On the third day daughter had cough and next day a rash.

Koplik's spots are of especial importance because when they have been found a definite diagnosis of measles can be made and the child isolated possibly two or three days before the appearance of the rash makes the disease self evident. Unfortunately, however, they do not usually appear until the child already has catarrh and, accordingly, has been markedly contagious for an appreciable number of hours. In fact it has been shown in a large series of instances that children coming down with measles were about equally dangerous to their school classmates on each of the last three days before the rash appeared in the skin. The day of the appearance of the exanthem or rash should therefore be considered at least the fourth day of the case of measles, and exposure to others should be dated from the third day prior thereto.

Throughout the period of invasion, the patient is apt to suffer also from a good deal of diffuse headache and general malaise, and perhaps drowsiness. The spleen may be palpably enlarged until the rash is well out.

In general, the features (fig. 7) of this period of onset may be readily enumerated chronologically by associating them with the fingers of the outspread hand. Beginning with the little finger is the first symptom, fever. Twelve hours later comes the ring finger, or puffiness of the lower eyelid and perhaps the measles line, together with the first sign of the enanthem or rash on the fauces. Twelve hours later, or middle finger, come the evidences of catarrh, also known as the three C's, to wit, conjunctivitis, coryza and cough. Twelve hours later, or the forefinger, are found Koplik's spots. Thirty-six hours later, or as far from the forefinger to the thumb as it is from the little finger to the forefinger, comes the rash or exanthem, and for the palm we have a certain amount of headache and a considerable malaise throughout this period.

In making an early diagnosis of measles, therefore, one has to differentiate it from a common head cold or the slightly more severe condition usually known as grip. The first thing to do is to think of the possibility of measles and then to search for suggestive features, such as fever, the involvement of the eyes, particularly this so-called measles line inside the lower lid, the macular eruption on the mucous membranes of the pharynx, and, of course, Koplik's spots. It should be habitual for a physician in examining a patient with a cold to examine inside the lower eyelids and inside the cheeks, even before he examines the pharynx.

When there is a history of exposure to the disease, as in a hospital ward, or in a family, the patient's temperature should be taken every four hours, beginning with the seventh day, and with the first indication of fever the patient should be put to bed and isolated, and kept thus until the temperature has remained normal at least two days. One must remember that occasionally, after the first little flare up, the temperature in measles may return to normal for a day or even two, but it rises again and rapidly as the other features of the disease become more marked.

Finally, I would make a plea for the individual isolation of every person with measles. Measles, by itself, very rarely kills or cripples. It is the complications which are due to secondary infections that cause the deaths in almost every instance. And these secondary infections at times seem almost as contagious as is the primary measles. In measles, the respiratory mucous membranes are already inflamed and unusually susceptible to new invasion. Instances could be quoted almost without number of otitis media and bronchopneumonia, spreading in a measles ward or through a group of patients with measles in a family. On the other hand, with the adoption of individual isolation of all patients at Willard Parker Hospital, the incidence of secondary infection in measles has dropped very markedly, and with this drop has come a notable fall in the mortality rate of measles in the hospital. The first steps toward individual isolation of the patients with measles in the

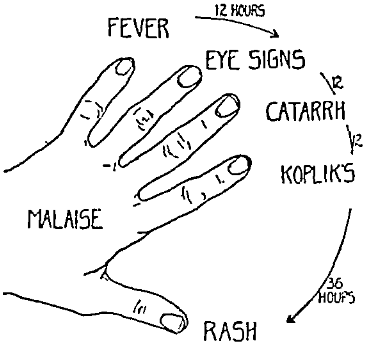

Fig. 7.—The sequence of events during the period of invasion of measles.

Willard Parker Hospital were taken in 1923 to prevent a repetition of the crowding of 1922, when New York City experienced the heaviest measles year of the twentieth century Actual aseptic technic was not completely installed until just before the onset of 1926, the second heaviest measles year of the century Had the hospital death rate in 1926 maintained the same ratio to the city death rate that it did in 1922, sixty-seven more children would have died in the hospital in 1926 than actually did die They were saved by individual isolation from one another And similarly in the first nine months of 1927, twenty-four more children, or an additional 10 per cent of the hospital's comparatively small number of patients with measles, would have died had it not been for aseptic technic and the resultant protection from secondary invaders Hence, in homes as well as in hospitals, every patient with measles should be isolated from every other patient with measles, so that if one should develop a secondary infection the others may be spared from its ravages And furthermore, no one with a cold, grip or any manner of infection should be allowed to care for a patient with measles, or to go near one, lest he carry a secondary infection to an otherwise clean case We are not fulfilling our duty to our patients if we do not exert every precaution for their protection from this very serious danger This winter, and every year, we must be prepared to make the earliest possible diagnosis of measles, to isolate the patient on the first suspicion, and to protect him from secondary infection

25 Claremont Avenue

SEVERE GRANULOCYTIC APLASIA OF THE BONE MARROW

REPORT OF A CASE FOLLOWING ARSPHENAMINE TREATMENT IN CONGENITAL SYPHILIS *

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It is recognized that arsenic compounds are well tolerated by children and that arsenic poisoning in the course of treatment for congenital syphilis is a rare occurrence Arsenic poisoning affecting the brain, the liver or the skin has occasionally been reported from clinics where large numbers of children are treated Veeder and Jeans[1] state that in several thousand arsphenamine injections in children they have observed only one reaction of each type, and that but one patient, one with encephalitis, failed to recover One case of arsenic dermatitis occurred at the Vanderbilt Hospital in the last two years during which intensive treatment for syphilis has been carried out on sixty children The case was a mild one and the patient soon recovered when arsenicals were discontinued

The following fatal case of arsenic poisoning with marked changes in the blood picture is of interest because it is apparently the first case of its kind to be reported in a child The symptoms began insidiously with pain in the side, there were no outward manifestations such as dermatitis or jaundice to call attention to the fact that the child was suffering from arsenic poisoning, and it was only when the blood was carefully studied that it was realized that some severe poisoning had occurred Even then it was thought that the child had an overwhelming infection rather than arsenic poisoning There was marked reduction in the number of white cells, with almost complete disappearance of the polymorphonuclear leukocytes

REPORT OF CASE

C D, a colored girl, aged 11 years, was brought into the clinic to be examined because of congenital syphilis in a younger member of the family The early history did not suggest syphilis, she did not show syphilitic stigmas and was apparently in good health, except that she was underweight The Wassermann and Kahn reactions of the blood were both positive Following the usual routine at the children's syphilis clinic, she was given intravenously 0 3 Gm of sulpharsphenamine, or 10 mg per kilogram of body weight One week later, the dose was increased to 0 4 Gm, or 15 mg per kilogram of body weight One week later, a third similar dose was given There apparently was no unfavorable reaction to any of these treatments The fourth week the child came alone to the clinic After receiving a treatment of 0 45 Gm of sulpharsphenamine, she said that she had been in bed for the past few days and that her side hurt The temperature was normal, and she did not appear very ill On physical examination it was found that the liver was large and tender, there was a general glandular enlargement, and the throat showed a grayish exudate Because it was thought that she might be suffering from arsenic poisoning, she was advised to enter the hospital On admission to the hospital the following day, the temperature was 101 F The only additional finding of importance was a white blood count of 4,450, with marked decrease in the polymorphonuclear leukocytes An exact differential count was not made During the first few days in the hospital, the temperature was irregular, ranging around 101 to 102 The red count was 4 850 000, the hemoglobin 80 per cent, and the white count, the same as before She seemed to be improving Blood cultures and a Widal test were negative The icteric index was normal Five days after admission the temperature suddenly went to 105 F The throat became intensely red and painful and the mouth foul The white count was still 4,500, but in the smear polymorphonuclear cells had entirely disappeared There was prominence of the papillae all over the body, and the palms and soles were intensely red Because of the sore throat, high fever and skin changes it was thought that the child might be developing scarlet fever and that the low white count and absence of polymorphonuclear leukocytes might be explained by an overwhelming infection She was given Dochez scarlet fever antitoxin but failed to improve Throat cultures consistently showed only staphylococci, although by the sixth day the child's throat was so sore that she could not swallow The eighth day the temperature was still 105, and the white count had dropped to 2,350 A blood transfusion of 250 cc of citrated blood was given The posterior pharynx became swollen on one side, so that it was thought that the patient was developing a peritonsillar abscess However, when the swelling was incised not a drop of pus could be obtained The ninth day after admission, when a white blood count was attempted, only eight cells could be seen in the whole counting chamber and in a blood smear the three white cells found were all lymphocytes The platelets were diminished in number At no time was any bleeding noted The child died on the ninth day after admission, ten days after the last injection of arsenic

At autopsy the observations were enlargement of the liver without any distinct pathologic changes in its structure bronchopneumonia with many organisms some hemorrhage but no cellular reaction, and almost complete aplasia of the bone marrow, affecting especially the myeloblastic cells

COMMENT

When the case was reviewed, it seemed probable that the arsenic had produced aplasia of the blood-forming elements, especially that part responsible for the polymorphonuclear series, that secondary infection had

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* From the Department of Pediatrics of the Vanderbilt University Hospital

[1] Veeder and Jeans in Abt's Pediatrics 5 655 1924

Summary of Data in Cases of Arsenic Poisoning

Number of Case	Sex*	Age	Race	Drug	Doses	Reactions	Interval in Days Between Last Treatment and Appearance of Symptoms	Hemorrhages	Anemia	White Blood Count (Lowest)	Polymorphonuclears per Cent	Platelets	Fever	Involvement of Mouth and Pharynx	Transfusion	Results	Postmortem Observations	Authors
1	♀	23		Neoarsphenamine	8		1	+					Moderate			Recovered		Amwyl Davies Brit J Dermat & Syph **33** 265 (July) 1921
2	♂	60		Neoarsphenamine	19		12	+	Severe	4 000	Low		High	+		Died	Incomplete	Chattellier Bull Soc franç de dermat et syph **30** 51 (Jan) 1923
3	♂	54		Arsphenamine Sulpharsphenamine	8 7		14	+	Severe	500	0	175 000	High	+	2	Died		Combes Arch Dermat & Syph **15** 194 195 (Feb) 1927
4	♂	29	C	Arsphenamine	2	1	0	+	Moderate	6 700	7		High			Recovered		Evans Arch Int Med **17**:1 (Jan) 1916
5	♀	46	W	Neoarsphenamine	26	+	7	+	Severe	1 600	30	Very low	Moderate	+	2	Died	Hemorrhages aplastic bone marrow	Feinberg J A M A **78** 888 (March 25) 1922
6	♀	45		Neoarsphenamine	4†	+	18	+	Severe	600	12	10 000	High	+		Died	Hemorrhages aplastic bone marrow	Gorke München med Wchnschr part 2, **67**: 1226 (Oct) 1920
7	♀	19		Silver arsphenamine	10	2	3	+	Moderate	2 700	46	48 000	Moderate	+		Recovered		
8	♀	33		Arsenical (drug?)	1†		8	+	Severe	1 230	Low	Very low		+		Died		
9	♀	24		Neoarsphenamine	6		7	+	Moderate	520	6					Died	Hemorrhages aplastic bone marrow	Kastlin Am J M Sc **173** 790-814 (June) 1927
10	♀			Neoarsphenamine	16	6	7	+	Severe	4 600	30					Died		Labbe and Langlois Bull et mem Soc med d hôp de Paris **43**: 786, 1919
11	♂	28	C	Arsphenamine	2	1	7	—	None	8 500	34					Recovered		Moore and Foley Arch Dermat & Syph **1** 25-42 (Jan) 1920
12	♀	37	W	Arsphenamine	5	3	0	—	None	3 800	10		Low			Recovered		
13	♀	22	C	Arsphenamine	4	3	0	+	Severe	2 800	0		Moderate	+		Recovered		
14	♂	38	W	Arsphenamine	8	5	0	+	Moderate	600	½		High		1	Died	Hemorrhages aplastic bone marrow	
15	♀	50	W	Arsphenamine Neoarsphenamine	2 9	2 9	7	+	Moderate	550	1	23 000	High	+	1	Died	Hemorrhages aplastic bone marrow	Moore and Keidel Arch Dermat & Syph **4** 169 177 (Aug) 1921
16	♀			Arsphenamine Neoarsphenamine Sulpharsphenamine Tryparsamide Sulpharsphenamin	6 10 7 10 3	6 4	0	+	Moderate	4 370	60	80 000				Recovered		O Leary and Conner Am J Syph **9** 262 273 (April) 1925
17	♂	36		Neoarsphenamine Sulpharsphenamine	8 10		0	+	Moderate	7 300	88	44 000				Recovered		
18	♂			Neoarsphenamine	18	+	1	+	Moderate	1 000	51		Low			Died	Hemorrhages bone marrow not examined	Rabut and Oury Presse méd **75** 810-813 (Sept) 1922
19	♂	48		Neoarsphenamine	12	+	0	+	Severe	1 900	55		High		2	Died		
20	♂	44		Neoarsphenamine	24	2	5	+								Recovered		Smith Arch Dermat & Syph **11** 237 240 (Feb) 1925
21	♀	21		Neoarsphenamine Merbaphen Colloidal silver 5% cc	9 214† 2	+	6	+	Moderate	29 000	46	70 000	High	+		Died	Hemorrhages aplastic bone marrow	Vill München med Wchnschr part 2 **68** 1675 (Dec) 1921
22	♀	21		Silver arsphenamine Merbaphen Colloidal silver 1.5% cc	 2 56	2	0	+	Moderate	76 000		Very low	Moderate			Died	Hemorrhages aplastic bone marrow	
23	♀	24	C	Neoarsphenamine Sulpharsphenamine	2 1	2	0	—	Slight	4 400	65	180 000	High	+		Recovered		Vanderbilt Medical Department ‡
24	♀	11	C	Sulpharsphenamine	4	2	0	—	Slight	136	0	Very low	High	+	1	Died	Hemorrhagic pneumonia aplastic bone marrow	
	♂	32	W	Benzene	2 mo		30	+	Severe	1 400	13	70 000	High		2	Died	Hemorrhages aplastic bone marrow	Rohner Baldridge and Hansman Arch Path & Lab Med **1** 221 226 (Feb) 1926

* Male is indicated by ♂ female by ♀

† Courses

‡ This case will be reported later

taken place, and that there had not been any cellular reaction to the infection because of lack of ability of the organism to form white blood cells

Reports of twenty-two cases in adults showing similar reactions to the arsphenamines were found in the literature, but no similar case was found reported in a child Summaries of twenty-four cases are given in the accompanying table, with our case included as the last in the series The twenty-third case occurred in the medical service of the Vanderbilt Hospital after we were ready to report our case, and will be reported later by the medical service Doubtless there have been cases other than those included in our table, as a specific name has not been given to this type of case For example, one finds cases similar to these under the heading of purpura, agranulocytic angina, aplastic anemia and arsenic poisoning The twenty-four patients included in the table had received treatment with various arsenicals neoarsphenamine, arsphenamine, sulpharsphenamine and silver arsphenamine The number of treatments given before the appearance of symptoms varied from a long series of treatments extending over two years to two treatments In many of the cases there were slight reactions, such as itching of the skin, vomiting or general malaise, before the marked blood changes were noted The cases were reported mostly as purpura or anemia following treatment with the arsphenamines They differed somewhat from our case in that in a majority, twenty in twenty-four, there was bleeding either from the gums or from the skin and mucous membranes Also, particularly in the cases in which there was marked bleeding, there was often a severe anemia as well as reduction in the white cells The red blood count varied from 4,800,000 to 80,000 and the hemoglobin from 90 to 13 per cent The cases, with two exceptions, were all similar to our case, in that there was marked reduction of the white blood count with reduction or complete disappearance of the polymorphonuclear cells In the highest white count reported the cells numbered 76,000, in one case only, and in the lowest no white cells were found The highest proportion of polymorphonuclears was 88 per cent, and in several cases polymorphonuclears could not be found in smears Judging from the literature, the arsphenamines apparently produce a stimulation of the blood-forming elements of the bone marrow followed by a severe depression The polymorphonuclear cells are the first to suffer In most of the severe cases there was high fever The only therapy used was transfusion In no case was any apparent benefit derived from transfusion Sodium thiosulphate was not used in any case Fourteen out of the twenty-four cases were fatal Autopsies, which were reported in nine cases, uniformly showed marked aplasia of the bone marrow with almost complete disappearance of the cells of the myelocytic series

Eleven patients showed severe stomatitis with sore throat In fact, one case in this series was reported as agranulocytic angina[2] The disease began after two years of arsenic treatment for syphilis and followed shortly after an injection of neoarsphenamine There were hemorrhages about the gums, a purpuric eruption and ulceration about the teeth A search through reports of agranulocytic angina revealed several other cases which may have been due to arsenic poisoning, but the reports were not detailed enough to make one certain of the connection

The blood picture in this type of arsenic poisoning is characteristic of granulocytic aplasia of the bone marrow and is doubtless found in other conditions The similarity of this reaction of the blood to that produced by chronic benzene poisoning is striking Such a similarity has been noted in several of the case reports It therefore seems worth while to cite a case for comparison The case cited[3] is the last one included in the table The patient, who had been exposed to benzene for two months, showed a large, tender liver, petechial hemorrhages and high fever The blood showed a marked anemia, leukopenia and comparative reduction in polymorphonuclear leukocytes, there were 860,000 red blood cells, 20 per cent hemoglobin, 1,400 white blood cells, and in the smear only 13 per cent polymorphonuclears The patient received two transfusions without improvement in the blood picture At autopsy many hemorrhages were found The bone marrow was almost completely aplastic

The arsphenamines contain a double benzene ring but it has not been proved that they ever break down into benzene in the body The majority of patients treated with the arsphenamines do not show any marked progressive change in the blood picture after treatment Some few patients react to the arsphenamines, or perhaps only to the brand of arsphenamine which they happen to receive, as all persons react to benzene Experimental work along the line of the cause of this peculiar reaction is almost impossible, because it is not a universal reaction but only a very rare one It is known, however, that the arsphenamines are excreted mostly by the liver and that arsenic tends to remain in appreciable concentration in the marrow of the long bones for some time after administration It is interesting that no similar case of aplasia of the bone marrow could be found following the administration of arsenic compounds which do not contain the benzene ring, and that symptoms similar to those reported here are not given in pharmacologic textbooks even as are rare occurrences in inorganic arsenic poisoning

This case is reported in order to call attention to a peculiar blood reaction occurring in a child treated with an arsphenamine Twenty-two similar cases have been reported in adults Although no therapy tried has been successful after the condition is sufficiently advanced to be well recognized, some patients less severely poisoned recover when arsenic is discontinued Even in the more severe cases, it seems possible that had attention been paid to apparently slight reactions following earlier treatments, and had the blood been carefully studied before further treatments were given, the fatal outcome might have been avoided either by the administration of sodium thiosulphate or simply by the avoidance of further arsenic treatment

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[2] Kastlin G J Agranulocytic Angina Am J M Sc **173** 799 814 (June) 1927

[3] Rohner F J Balbridge C W and Hansmann G H Chronic Benzene Poisoning Arch Path & Lab Med **1** 221 226 (Feb) 1926

Value of Clinical Observation—Clinical medicine in the past has been so much a matter of personal skill and experience that when the clinician dies his work dies with him, whereas the results of investigations in a laboratory are recorded so carefully that something tangible always remains to enable one worker to take up a subject at the stage where another has finished There can be no doubt that skill in diagnosis, and more especially skill in prognosis, must always be largely a matter of individual experience, but if such valuable knowledge, gained during a studious life, is not to be lost when he who accumulated it dies, some means must be found to provide a foundation on which future investigators may build—Ramsay, A M *Brit M J* **2** 1216 (Dec 31) 1927

RETROPERITONEAL LUMBAR (PARANEPHRIC) ABSCESS

REPORT OF TWO CASES RESULTING FROM MUSCLE STRAIN *

ALFRED BROWN, M D
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OMAHA

Abscesses in the area situated behind the posterior parietal peritoneum which is bounded above by the diaphragm and below by the lower boundary of the false pelvis are of comparatively infrequent occurrence Because of this rarity they have received little attention and less detailed study as to the exact anatomic regions in which they are found, and are commonly grouped into different types in a classification that is neither wholly anatomic nor wholly etiologic In general, they are usually referred to as perinephritic abscesses, and a common classification of these is

1 The perinephritic abscess
2 The subphrenic abscess
3 The tuberculous lumbar abscess
4 The retroperitoneal abscess due to the perforation of a retroperitoneally situated appendix

The so-called perinephritic abscesses are commonly divided into primary and secondary varieties with respect to their etiology but without reference to their anatomic situation The primary type usually occurs as the result of a metastatic infection during the course of an infectious disease, such as typhoid, pneumonia or one of the exanthems The secondary abscess results from the extension of a suppurative process from a neighboring organ, such as the kidney, by perforation of a stone or rupture or extension of a pyelonephritis, the spine, by extension of a tuberculous abscess, or the appendix, by perforation of an abscess into the retroperitoneal space In this way classifications 2, 3 and 4 actually become subclassifications of group 1 No attempt is made to locate these abscesses accurately as to other anatomic situations

The primary abscess may also be due to injury, either (*a*) rupture of the kidney substance or pelvis of the ureter with the escape of urine into the perirenal fat, or (*b*) in some instances a mild trauma, such as coughing, lifting a heavy weight, slipping and wrenching the side when trying to hold the body balance, and other slight injuries too numerous to mention These are presumed to cause hemorrhages into the perirenal tissues, which become secondarily infected by a hematogenous, the renal or the intestinal route

If this assumption of hemorrhage as the causative factor in this type of abscess is correct, and it seems to be most reasonable, it is questionable whether these abscesses should be classified as true perinephritic abscesses or rather as abscesses of the paranephric body of Zuckerkandl and Gerota, which is a continuation of the subperitoneal fascia of the abdominal wall and lies outside the true perirenal fat (figs 1 and 2)

If hemorrhage results from muscular violence, such as a sudden strain, which is presupposed in this condition, it would come from the tearing apart of a few muscle fibers resulting from the sudden violence The blood escaping from the surface of the muscle would enter the fatty layer covering this surface and would not reach the perirenal fat as it would not perforate the fascia of Gerota unless that structure were torn, and a tear of this fascia, because of its mobility, would not be apt to occur from muscular violence

The observations in the following cases appear to bear out this assumption

REPORT OF CASES

Case 1—*History*—A R S, a married man, aged 34, a truck driver, who was admitted, Aug 29, 1925, had been forced backward while lifting a heavy window sash from his truck, three weeks before admission, and had felt pain in the left side of the abdomen He did not pay much attention to it and kept on working for three days, but he had sweats at intervals during the day and night and felt chilly at night The fourth day after the injury he stayed at home but returned to work on the fifth day and remained at work for a week, then he had to stop working because he did not feel able to go back and remained at home Ever since the injury he had had a dull constant aching pain in the left side below the ribs which grew worse toward night *The pain did not* interfere with sleep, although it hurt him to turn over in bed He had had occasional chilly sensations and profuse sweats but had not felt feverish His appetite had been poor He had had regular movements of the bowels without medication He had not had any urinary symptoms and had not noted any change in the color of the urine

Physical Examination—The patient was of slight build but of good musculature, he was too small, however, for heavy manual labor He looked quite sick, tired out and apathetic Aside from some tenderness over the left oblique muscles posteriorly, the general examination was negative There was no abdominal rigidity The temperature was 101 8 F, the pulse, 96, and the respiration, 22 The urine was straw colored, and had a specific gravity of 1 030 Tests for albumin and dextrose were negative There was no pus or blood Analysis of the blood showed red blood corpuscles, 5,100 000, hemoglobin, 85 per cent white blood corpuscles, 16,400, polymorphonuclears, 84 per cent, and lymphocytes, 16 per cent

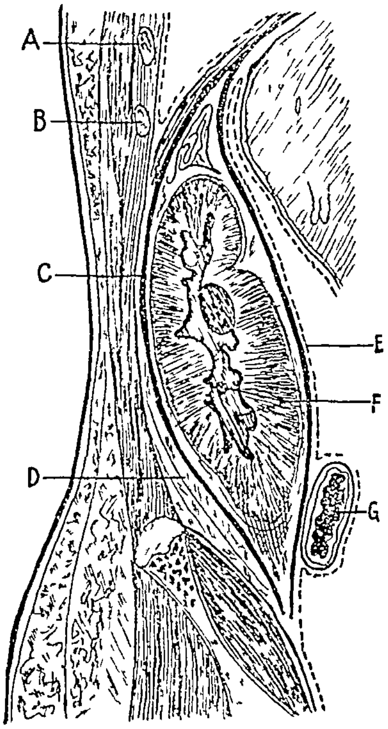

Fig 1—Sagittal section through posterior abdominal wall showing the relations of the capsule of the kidney (after Gerota [Gray]) *A* eleventh rib *B* twelfth rib *C* posterior lamella of renal fascia *D* paranephric body (site of abscess) *E* peritoneum *F* vessels of hilum of kidney *G* section of right colic flexure

August 30, the patient still had a high fever The general condition was poor, and he looked sick and anemic

August 31, a Widal test was negative for *B typhosus* and paratyphoid A and B The white blood cells numbered 16,600 and the polymorphonuclears, 83 per cent

September 1, there appeared to be a mass that could be felt through the left side of the abdomen The white blood count was 19 200, polymorphonuclears numbered 91 per cent

September 2, the Widal test was negative for *B typhosus* and paratyphoid A and B The patient still looked sick and was not improving The mass was indefinitely palpable, and there was no rigidity of the abdominal muscles A roentgenray examination was made by Dr T T Harris, who reported that the thoracic and lumbar vertebrae were normal The main cavity of the chest was normal with only a slight thickening in the middle portion The left diaphragm was pushed upward with a distinct rounded dome arch In the left lumbar region, the left psoas muscle was obscured by increased density Roentgenographically there was pressure beneath the left part of the diaphragm and an increased density along the region of the left psoas muscle, which was probably due to inflammatory pathologic changes

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* *Read before the Surgical Association of the Rock Island Lines* Omaha Dec 6 1927

Operation and Course—Operation was decided on and performed, September 4 Under general anesthesia an incision was made along the lateral border of the erector spinae muscle and prolonged downward above the crest of the ilium The lower portion of the kidney fascia was adherent to the anterior surface of the psoas muscle, and below this point there was an abscess cavity lying immediately in front of the muscle, which contained about 2 ounces (60 cc) of mixed pus and blood Culture of this mixture showed *Staphylococcus albus* A note made at the time of operation stated that the observations would bear out the assumption that this abscess was due to a tear of the muscle causing a blood clot which subsequently became infected An uninterrupted convalescence followed, and the patient was discharged with the wound healed thirty-eight days after operation

Case 2—*History*—In the history given by N J, a married woman, aged 37 the wife of a farmer and referred by Dr C L Housel of Taber Iowa, Nov 3, 1927, the only point bearing on her present condition was that five years before she had been in an automobile accident in which both arms were broken, the left knee cap was split and she suffered several scalp wounds Since then she had had occasional pain in the right side which she described as starting under the short ribs and going all over the bowels, finally settling in the small of the back, which became tender At times she had to be in bed three or four days During the acute attack she became nauseated and vomited, and sometimes almost fainted There was no change in the bowel movements The pain did not have any relation to eating or to the menses She thought that she did not have any fever during these attacks, which were from three to six months apart

This history suggested gallbladder disease rather than abscess, but owing to the preponderance of the main disturbance no attempt had yet been made to prove or disprove this assumption

The present trouble began one week before admission when the patient moved a large safe containing heavy dishes The safe began to fall over on her, pushing her backward, and it took all her strength to right it About two hours later, she noticed pain of a dead, sickening character, which started below the short ribs in front, passed backward and finally settled in the right side of the back and right hip Three days after the onset of this pain, she vomited a couple of times, and on the same day had a chill which was repeated the fourth day, when she noticed a lump in the right side of the back The following day she had irregular periods of sweating, which had continued The appetite was very poor, but the bowel movements were normal Urinary symptoms were not present and since the transient discomfort at the onset, there had not been any pain in the front of the abdomen

Physical Examination—The patient was rather thin, evidently quite sick and apparently in considerable pain, but nothing noteworthy was found except the local condition In the lower part of the right flank was a mass about the size of a large orange, which appeared to lie beneath the lateral muscles of the abdominal wall This mass was tender Its upper limit could not be made out definitely, and its lower limit seemed to merge with the crest of the ilium Toward the median line its limit was sharply defined by the softness of the abdominal wall, and the fingers could be pushed toward its posterior limit indenting the abdomen, which was soft and did not present tenderness at any point With bimanual examination, the mass gave a feeling of fluid under tension in a sharply defined area Movement with respiration could not be made out

The temperature was 102 F the pulse, 104, and the respirations, 25 Analysis of the blood showed red blood corpuscles, 3 870 000, hemoglobin, 89 per cent and white blood corpuscles 18 000 with 94 per cent polymorphonuclear leukocytes The urine was a dark straw color, with a specific gravity of 1 022 Tests showed the presence of acid and albumin with a trace of acetone Dextrose was absent Microscopic examination showed occasional leukocytes and red cells

Operation and Course—With the previous experience in mind, there did not seem to be any indication for further investigation, and immediate operation was decided on Likewise, bearing in mind the location of the abscess in the previous case and the unnecessary exposure of true perinephric fat which had been made I decided on a low incision, under general anesthesia, beginning at the lateral margin of the erector spinae muscle and passing forward parallel to the crest of the ilium The lumbar fascia was divided at the lateral margin of the erector spinae and an abscess entered which contained 6 or 8 ounces (from 175 to 235 cc) of greenish yellow pus The cavity was situated in front of the quadratus lumborum and psoas muscles, below the level of the kidney, and did not involve the true perinephric fat After evacuation, a rubber drainage tube was inserted and the muscles closed around it Cultures of the pus showed a moderate number of gram-positive diplococci with a tendency to chain formation There were a few clusters, a moderate number of long curve bacilli and a few short thick bacilli The pus had a marked odor of colon bacillus

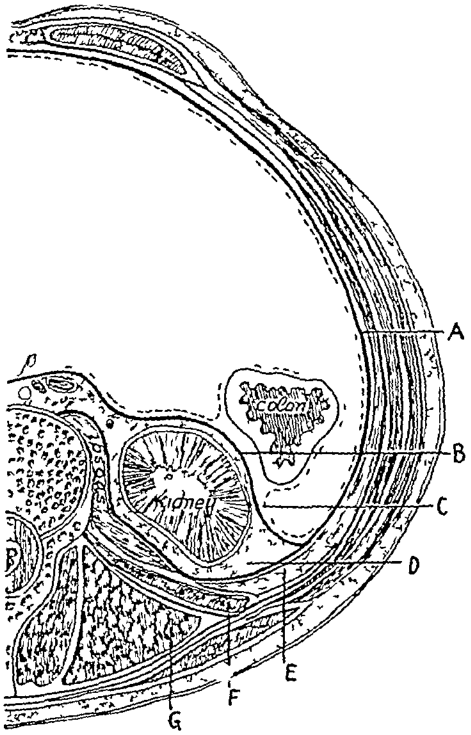

Fig 2—Transverse section showing the relations of the capsule of the kidney (after Gerota [Gray]) *A* subperitoneal fascia *B* anterior lamella of renal fascia *C* peritoneum *D* adipose capsule *E* paranephric body (site of abscess), *F* quadratus lumborum, *G* sacrospinalis

Convalescence was uneventful The temperature became normal on the sixth day On the eighth day, the white blood cells were 8 000, with 85 per cent polymorphonuclear leukocytes On the tenth day the patient was sent home to the care of her local physician and was subsequently reported to be making satisfactory progress

CONCLUSIONS

1 Traumatic abscess of the back, in common with the abscess occurring as an extension from tuberculosis of the spine and that resulting from the perforation of a retroperitoneally situated appendix, occurs in a definite anatomic area which contains fatty tissue that has

been designated the paranephric body This fatty tissue is distinctly separated from the true fatty capsule of the kidney both by its chemical makeup and by reason of the fact that a layer of fascia is present between the two An abscess, irrespective of its etiology, occurring in this tissue might more properly be called a paranephric abscess, the name of perinephritic abscess being reserved for that involving the true fatty capsule of the kidney and in direct relationship with the kidney itself

2 The operative approach to this type of abscess through a low lumbar incision is more direct and affords better drainage, while at the same time it avoids injury to the kidney and its capsule, which may take place if one or the other of the usual types of kidney incision is employed

Medical Arts Building

THE ETIOLOGY AND RESULTS OF TREATMENT IN ANGIONEUROTIC EDEMA AND URTICARIA *

FRANK R MENAGH, M D
DETROIT

This paper embodies the experience gained in the study and treatment of 260 cases of angioneurotic edema and urticaria No distinction is made between these two disorders It is assumed that they are the same process, involving in the case of urticaria the superficial layers of the skin, and in angioneurotic edema the subcutaneous tissues In some instances other tissues may be involved also, as in the type of epilepsy due to allergic reaction The point of view from which these observations are made is that in these cases the disorder is allergic, and that in every case there is a definite etiology This etiologic factor is always the absorption of some foreign protein by a sensitive individual, just as in hay-fever and bronchial asthma

Successful treatment in hay-fever and bronchial asthma depends on first determining what foreign protein or proteins are responsible for the reaction The offending substance is then either removed or reduced in amount, so that absorption does not reach the point at which it will produce symptoms In case this is impossible, an effort is then made to increase the tolerance of the individual sufficiently to allow him to absorb, without developing the characteristic reactions, such protein as cannot be removed This is precisely the method followed in the treatment of angioneurotic edema and urticaria

Long before the present methods of treating hay-fever were developed, it was recognized that hay-fever was associated with pollinating plants, although the plants regarded with the most suspicion, that is, roses and goldenrod, were eventually found to be relatively harmless On actual test, it was found that the inconspicuous grasses and ragweed were the chief offenders Likewise, in angioneurotic edema and urticaria, certain foods, especially sea-foods and strawberries, have long been suspected, while epsom salt and calomel have been time honored remedies in the treatment of these troublesome disorders That treatment along these lines has not been especially successful is attested by the long list of remedies recommended in relatively recent literature, no less than seventy-five having been noted in a recent survey

The series of cases considered here has been studied as an allergic group Certain data have been considered because of the aid they give in determining whether or not a given individual may belong to this class It will be seen (table 1) that there are only ninety-two, or 35 3 per cent, males, compared with 168, or 64 6 per cent, females A similar study recently made of a parallel group with bronchial asthma showed 52 3 per cent males and 47 7 per cent females This difference is due to the greater prevalence in women of certain of the etiologic factors to be discussed later Another aid to diagnosis was the family history of allergy in eighty-five cases, or 32 6 per cent, of this group and a personal history of other allergic reactions in fifty-three patients, or 20 3 per cent, of the group The age incidence (chart 1) is found to be approximately the same as for bronchial asthma The ages ranged from infancy to over 70 years, with the majority of the cases falling in the age period from 30 to 49 years It will be seen later that there are two distinct age groups, depending on etiology

METHOD OF STUDY

The method of study followed was to take the usual history, being careful to elicit any information that might give some clue to the cause of the disturbance, following which a complete physical examination was made The patient was then tested for hypersensitiveness to foreign proteins by the usual skin tests The proteins derived from (1) foods, (2) animal emanations and (3) pollens were used in these tests The method of applying these tests is well known and will not be discussed The results (table 2) show that 152 patients, or 58 7 per cent, gave some reaction to one or more of these proteins Of these, ninety-seven, or 63 8 per cent, showed a reaction to food pollens Of this number only thirty, or 19 7 per cent, showed a reaction to sea-food, and even when such a reaction was found, in only one or two cases was it thought to play a role in the causation of symptoms In one patient, an infant, cod liver oil was the cause of the rash Only two patients were sensitive to strawberries, and fruits and berries generally were unimportant, as was also the case with meats It must be borne in mind in this connection that transient, erythematous rashes were not considered in this series of cases The foods found to be the most important were wheat milk,

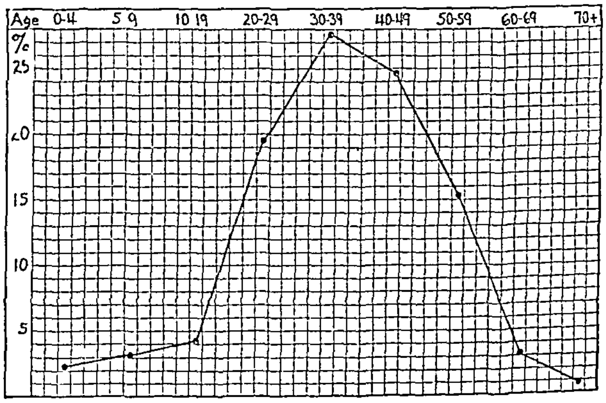

Chart 1 —Age incidence in urticaria and angioneurotic edema

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* From the Medical Department of the Henry Ford Hospital

* Read before the Annual Meeting of the Michigan State Medical Society June 17 1927

eggs and white potatoes. Two patients giving a history of attacks following the use of honey were found sensitive to clover.

It is not usual for proteins coming in contact with the skin externally to cause angioneurotic edema or urticaria. For this reason, observations of hypersensitiveness to animal emanations and to pollens are valuable chiefly because they help to establish the allergic status of the individual. An occasional patient will develop such symptoms, usually associated with severe hay-fever or with the use of hair or feathers in the bedding. An interesting fact was that nine patients, all women, reacted to orris root, a frequent ingredient of face powders. This is frequently the cause of bronchial asthma, and it was felt that it was responsible at times for urticaria appearing about the face.

Table 1.—Sex and Allergic Data Obtained from Case Histories

	Number	Per Cent
Cases studied	260	100
Males	92	35.3
Females	168	64.6
Patients with allergic family histories	85	32.6
Patients with other allergic manifestations than urticaria or angioneurotic edema	53	20.3

Table 2.—Patients Reacting to Skin Tests and Type of Protein Giving Reactions

	Number	Per Cent
Patients showing reaction	152	
Patients reacting to foods, including sea food	97	63.8
Patients reacting to sea food	30	19.7
Patients reacting to animal emanations	82	53.9
Patients reacting to pollens	78	51.3
Patients reacting to orris root (all women)	9	5.9

In addition to the proteins considered, two cases appeared to be due to a chronic sinus infection, and one cleared following the removal of badly infected teeth and tonsils. One case recurred when an acute sinusitis developed. One very striking case of urticaria occurred in a 3 year old child with a severe infection spreading from the ethmoidal sinuses to the orbit of the eye. One case of urticaria was associated with a severe staphylococcus infection with cellulitis of the hip following an accident, the urticaria clearing with the infection. No other cases were found associated with these types of infection. There were five pregnancies in this series. The urticaria was definitely associated with the period of pregnancy but was probably due to factors to be discussed presently. One definitely allergic patient became sensitive to insulin, and developed marked attacks when he received it.

Syphilis has been cited as a possible cause of urticaria. Nine cases of syphilis were found, which is about the percentage in the general hospital admission. In no case did syphilis appear to be an etiologic factor, nor did treatment of the syphilis influence the urticaria.

In the group of patients so far discussed we have found that 58.7 per cent can be considered allergic. It does not follow that, because they have reacted to certain foreign proteins, these proteins are the cause of the symptoms. In fact, further study and observation showed that we had discovered the etiology in only seventy-eight patients, or 30 per cent, while these proteins formed the partial etiology in twenty-nine additional patients, or in 11.2 per cent. We have thus some clue to the etiology in a maximum of 41.2 per cent of the total group. This leaves nearly 60 per cent in which no clue whatever is given from these studies and it is this group that has always caused the greatest difficulty in the treatment of angioneurotic edema and urticaria.

SPECIAL GASTRO-INTESTINAL STUDIES

The recent increase of knowledge relating to diseases of the gastro-intestinal tract made me feel that important information might be gained from observation in this direction. Accordingly, as systematic a study as possible was made of digestive disturbances in this group of patients. The history and physical examination were checked and special methods for studying the gastro-intestinal tract were utilized. These special studies were made by the gastro-intestinal division of the hospital, and the standards accepted by them were used in diagnosis.

The only type of gastro-intestinal disorder[1] that appeared to be playing any rôle in the etiology of angioneurotic edema and urticaria was that associated with the biliary tract. In those cases showing severe involvement, it was not difficult to elicit plenty of evidence from the history and physical examination, showing an association between the biliary tract and the allergic symptoms. In the milder cases of biliary tract involvement, valuable information was obtained from the special studies and especially from transduodenal biliary drainage. As a result of this type of investigation (table 3), we found that 129 cases, or 48.8 per cent of the entire group studied showed involvement of the biliary tract, and in these cases there were no other observations that could be interpreted as in any way related to the angioneurotic edema and urticaria. In addition to this, there were twenty-nine cases, or 11.2 per cent, which showed biliary tract involvement in addition to a possible etiology in other types of protein reaction. The biliary tract involvement ranged from the most severe and acute attacks to cases interpreted as early biliary tract infection and recognizable only through a study of material obtained through transduodenal drainage.

Table 3.—Grouping of Cases According to Etiology

	Number	Per Cent
Etiology in food or other proteins but with no biliary tract involvement	78	30
No etiology except in biliary tract	127	48.8
Etiology in both food and other proteins and in biliary tract	29	11.2
No etiology found	26	10
Total	260	100

Table 4.—Various Reactions in Group With Biliary Tract Involvement

	Number	Per Cent
Drainage done in the 127 cases of this group	97	76.4
Cases in which cultures were obtained from the bile	81	83.5
Cases from which autogenous vaccines were prepared	75	77.3
Patients tested against autogenous vaccines	65	86.7
Patients showing positive reactions to autogenous vaccines	55	73.3
Patients showing negative reactions to autogenous vaccines	10	13.3

In view of this information, we concluded that absorption from the biliary tract played a very important part in the causation of angioneurotic edema and urticaria. If this absorption was in the nature of a foreign protein, it seemed probable that the source of this would be found in bacteria present in the biliary tract, whether such bacteria were actually causing an active inflammatory reaction or not We are entirely aware of the difference of opinion as to the value of cultures made from material obtained from the so-called sterile transduodenal drainage Such sterile drainages were made wherever possible, and as the results at least are interesting, they are presented in table 4 In the 129 cases showing only biliary tract involvement, sterile transduodenal drainage was done in ninety-seven Positive cultures were obtained in eighty-one, or 83 5 per cent, and autogenous vaccines were obtained in seventy-five, or 77 3 per cent, of the drainages from which cultures were taken Of these vaccines, ten were never tested, ten, or 13 3 per cent, gave negative reactions, while fifty-five, or 73 3 per cent, gave positive reactions In every case, at least two other vaccines, and the solution in which the organisms were suspended, were used as controls These controls consisted of a nonautogenous vaccine containing an organism similar to the one being tested for each autogenous vaccine being tried, and a nonautogenous vaccine with a different organism Observation was extended over a period of twenty-four hours, and only those cases were considered positive in which a definite reaction with the autogenous strain was obtained It is also noteworthy that at times attacks of urticaria were brought on by the hypodermic administration of these vaccines

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[1] Mateer, J. G., and Henderson, W. S.: Chronic Biliary Tract Disease and Diagnostic Criteria, Arch. Int. Med. 38: 70 (Dec.) 1926.

The organisms recovered (table 5) show the largest group in the nonhemolytic streptococcus strains, including *Streptococcus viridans* *Staphylococcus albus* comes next with *Staphylococcus aureus* and the colon bacillus, in the order named One culture each of *Micrococcus catarrhalis* and hemolytic streptococcus were obtained

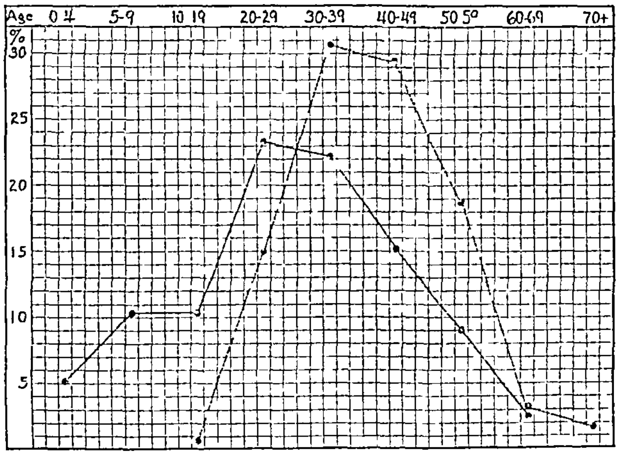

Chart 2 —Age incidence in group in which the cause was outside the biliary tract and in group of patients with involvement of biliary tract solid line age incidence in group in which the cause was outside the biliary tract broken line group of patients with involvement of biliary tract

PARALLEL STUDIES IN BRONCHIAL ASTHMA

During the period of this study, a parallel group of patients with bronchial asthma was being observed[2] In the asthmatic patients, the vaccines found to be of importance were those obtained from the upper respiratory tract Consequently, in this series, extensive observations were made with autogenous vaccines derived from the same source as well as from teeth and tonsils, but the only positive results obtained were in those few cases mentioned previously in this paper Conversely, no cases of bronchial asthma were found to be due to biliary tract infection

COMMENT

I believe that results as definite as these are worthy of some careful consideration There would seem to be some basis for concluding that protein from bacteria in the gastro-intestinal tract is a possible source of a considerable percentage of cases of angioneurotic edema and urticaria

Table 5 —*Organisms from Which Autogenous Vaccines Were Made and Those Giving Positive Skin Reactions*

Organism	Vaccines Obtained	Vaccines Positive
Hemolytic streptococcus	1	1
Nonhemolytic streptococcus	18	11
Streptococcus viridans	23	17
Staphylococcus aureus	18	15
Staphylococcus albus	30	21
Micrococcus catarrhalis	1	1
Bacillus coli	10	8

As a result of these observations, these cases arranged themselves as follows according to etiology (table 3)

1 Cases in which the etiology was found to be in food or other proteins but showing no involvement of the biliary tract These comprised seventy-eight, or 30 per cent of entire group

2 Cases showing no etiology except biliary tract involvement, of which there were 127, or 48 8 per cent.

3 Cases showing both biliary tract involvement and hypersensitiveness to other proteins, totaling twenty nine, or 11 2 per cent

4 Cases in which no clue as to etiology was discovered There were twenty-six of these cases, or 10 per cent of the entire series

AGE AND SEX INCIDENCE

As might be expected, the age incidence for these two groups varies (chart 2) In the group showing an etiology outside the biliary tract, the majority of the cases occurred in patients from 20 to 39 years, while in the group showing only biliary tract involvement as an etiologic factor the majority of the cases occurred between the ages of 30 and 49

An interesting fact is now seen in the sex incidence previously mentioned In the total group there were 64 6 per cent females and 35 3 per cent males If only that part of the series included in the group showing no biliary tract involvement is considered, there are 48 6 per cent males and 51 4 per cent females, while the group with biliary tract involvement includes only 30 per cent males and 70 per cent females The entire excess of females is thus found to be in the group showing biliary tract involvement, and is in accordance with the well known fact of greater prevalence of biliary tract infection in women than in men

The five cases occurring in pregnancy are also explained on the basis of biliary tract infection in those studied, and this might possibly be a factor in the others

TREATMENT

Treatment in all these groups consisted in removing as far as possible the offending protein whenever this could be done If this was impossible, an attempt was made to increase the tolerance of the individual by administering the protein in graduated doses This method was not as successful here as in hay-fever and in some types of bronchial asthma In the group in

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2 Menagh F R - Results of Treatment in Bronchial Asthma Ann Clin Med 5 656 (Jan) 1927

which biliary tract disease was associated with the symptoms, a number of methods were used The diet and bowels were regulated, bile salts were administered, biliary drainages were done and when autogenous vaccines had been found to be positive they were administered *It is felt that vaccines often are valuable but only when the other methods of treatment precede and accompany them* Therapeutic biliary drainage is of great value At times urticaria makes its appearance with the drainage, but more often striking relief is obtained Many patients in the group with biliary tract disease showed returning allergic symptoms as the first indication of a biliary tract flare-up, and in some instances the first evidence the patient had ever had that a cholangeitis or cholecystitis existed was the appearance of urticaria Later, they have developed severe symptoms relative to the tract

Surgery did not contribute a great deal to the treatment in these cases One patient gave a history of the urticaria appearing after an operation for gallstones, while only three had gallbladder surgery performed while under my observation Complete relief was obtained in all three of these cases, however It appears that cholangeitis is more commonly associated with this type of absorption than is cholecystitis

In tabulating the results of treatment (table 6), it was found that in ninety-four cases out of the 260, or 36 1 per cent, the results were unknown In these calculations, only the known results are considered The results are known in 166 patients, of whom twenty-seven, or 16 3 per cent, were unimproved, sixty-four, or 38 6 per cent, were definitely improved but developed attacks when the etiologic agents became active, and seventy-five, or 45 2 per cent, were well Individuals in this group called well would also develop attacks again if they came into contact with a sufficient amount of the protein to which they were sensitive, but they were generally able to avoid it

The results given by the two principal groups are of interest In the group not associated with biliary tract absorption, 14 per cent were unimproved, as compared to 11 4 per cent of the group with biliary tract involvement In the first group, only 28 per cent were improved as compared to 50 per cent in the second, but 57 per cent were considered well as compared to only 38 5 per cent in the group with biliary tract disturbance When it is realized that to improve an infection in the biliary tract is usually possible but that to clear it entirely is very difficult, the difference in these results is seen to be a quite logical one

Table 6—*Summary of Results from Treatment**

Group	Unimproved No	Unimproved %	Improved No	Improved %	Well No	Well %	Total No
Entire series	27	16 3	64	38 6	75	45 2	166
Group showing etiology *only* in biliary tract involvement	9	11 5	39	50	30	38 5	78
Group showing etiology in food and other proteins but *no biliary tract disease*	8	14	16	28 1	33	57 9	57

* Cases in which results are not known were not included in the statistics

SUMMARY

1 In 260 cases of angioneurotic edema and urticaria, these disorders have been considered as allergic phenomena

2 These cases have been classified into two major groups, according to etiology In one group comprising 30 per cent of the series in which there was entire freedom from biliary tract disorders, the etiologic factors were the absorption of food and other foreign proteins In the second group, comprising 48 8 per cent of the series, biliary tract disease was the only etiologic factor Observations were made relative to the absorption of bacterial proteins from the biliary tract in these cases

3 The etiologic factors in 11 2 per cent were *biliary tract disease* and the absorption of other types of *foreign protein*

4 Treatment was directed toward the biliary tract when this was involved, and toward the removal of active foreign proteins in those cases in which these proteins were responsible for the symptoms

5 In those cases in which results are known 16 3 per cent were unimproved by treatment, 38 6 per cent were improved, and 45 2 per cent showed complete relief

CONCLUSION

In searching for the etiology of angioneurotic edema and urticaria, it is necessary to consider absorption from the biliary tract as a possible cause in addition to the usual foreign proteins considered in other allergic problems When this factor is kept in mind, treatment gives satisfactory results

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QUANTITATIVE STUDY OF CLINICAL ULTRAVIOLET SOURCES

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AND
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NEW YORK

The greatly increased utilization of ultraviolet rays in therapy and the numerous requests for detailed information as to the emanation from various available sources, and especially for a comparison of such sources, has led us to investigate quantitatively a number of the more practical sources

Many reports of such sources are available from the standpoint of the pure physicist These reports are not adapted to the needs of the physician The ultraviolet has been described as a whole without further division or the divisions of the ultraviolet selected by the physicist have not been in accord with the known physiologic action of these rays There has been no uniformity of the sources studied, making it impossible to interpret the results in view of clinical experience There have been too many variable conditions to which the clinician cannot hope to conform

Existing literature is difficult to interpret because the investigators have not clearly defined the regions of radiation studied Many measurements have been expressed in percentage without due consideration of what constituted the total radiation (100 per cent) Thus, for example, the mercury vapor arc in quartz has been said to give 66 per cent ultraviolet, in another instance the ultraviolet has been stated to be 28 per cent Both are correct In the first instance, the total radiation (100 per cent) on which the percentage is based comprised radiations from 1,850 to 14,000 angstrom units In the second instance, the total radiation measured was from 1,850 to 40,000 angstrom units Similar variation exists in data for carbon arcs Original papers from the physicists in nearly all cases state the basis of their percentages Compilers of medical literature, however, frequently fail to mention this basis, with the result that the literature abounds in many extravagant figures which are wholly incomparable and not justifiable These pitfalls have been numerous with the result that many misconceptions have, by virtue of repetition, become accepted as fact

The ultraviolet has been of greatest interest to physicians For a proper understanding of the ultraviolet, we offer the following concept The ultraviolet, as its name implies, is that region of the spectrum beginning at 3,900 angstrom units contiguous to the visible violet, and extending to the limit of transmission of air at about 1,850 angstrom units Not all the ultraviolet is of value therapeutically or biologically In rickets, in tetany, in activation of food, oils and feeds, and, indeed, in all biologic investigations of the action of the ultraviolet, the upper limit of effective radiations has been found to be at about 3,200 angstrom units, which is the limit of ultraviolet transmission of ordinary window glass, and serves as a convenient division point in our concept The limit of noon summer sunlight at about 2,900 angstrom units constitutes another dividing line

Table 1—*Distribution of the Ultraviolet Rays*

Angstrom Units*	Spectral Region
7 700 to 3 900	Visible light from red to violet
3 900 to 3 200	Intravital ultraviolet (passes through window glass)
3 200 to 2 900	Vital ultraviolet (present in sunlight and does not pass through window glass)
2 900 and shorter	Extravital ultraviolet (not present in sunlight)

* One angstrom unit equals 0 0000001 mm

We have called the biologically active ultraviolet between 2,900 and 3,200 angstrom units the vital ultraviolet This zone is present in summer noon sunlight, does not pass through ordinary window glass, and is essential for the normal growth of babies, for the activation of foods and oils, for effecting normal calcium metabolism in pregnant women, for causing sunburn and sun tan, and for a host of biologic reactions that have not yet been clearly defined

We have called the zone between 3 900 and 3,200 angstrom units which is the ultraviolet present in sunlight and which passes through ordinary window glass, the intravital ultraviolet This zone has no known, measurable, effective, health-giving value for animals and man

The radiation shorter than 2,900 angstrom units not found in sunlight but emitted by a number of artificial sources, is termed the extravital ultraviolet This zone is also of therapeutic value Recent experimental work proves that these radiations are very effective in curing rickets, and in activating cholesterol, foodstuffs and oils However, unlike the vital ultraviolet zone, they are weak in production of the erythema

A presentation of the distribution of the emanated energy of a number of practical sources of light based on the concept given has proved of value to the physician employing ultraviolet, and deserves wide dissemination

The division of the ultraviolet energy from the light sources into intravital, vital and extravital ultraviolet necessitated an accurate measurement of the energy in the component wavelengths, together with a determination of the total ultraviolet energy from the sources under definite operating conditions This was accomplished by measuring the light spectralized by a system of quartz lenses and prisms a bismuth silver thermopile and a galvanometer being employed as the recording device By this method we were able to determine readily the quantitative relative intensity of the component wavelengths for the region extending from the violet (4,100 angstrom units) to a point in the extravital ultraviolet at 2,450 angstrom units The ultraviolet limit was chosen at 2,450 angstrom units because the sources investigated did not emit shorter radiations of appreciable intensity

The total intensity of the light source at a distance of 40 inches was obtained by passing the light first through a quartz cell containing distilled water (which removed the long infra-red), then through a plate of Corning corex, G 986-A (which transmitted only light from 2,450 to 4,100 angstrom units, and a little red and infra-red), and thence into the thermopile The amount of transmission for the various wavelengths through filter G 986-A was carefully determined It was therefore possible to correct for variations in transmission As the red and infra-red rays that pass through the filter also affect the thermopile, it was necessary to apply a correction, which readily was made by passing the light through a Corning G 24 filter in addition to the quartz cell and G 986-A glass Corrections were also made for reflection of light from the quartz water cell and for the glasses In addition, the transmission of G 24 filter was known The thermopile and galvanometer used was carefully calibrated against a radiation standard provided by the United States Bureau of Standards, which made it possible to express the measurements in absolute units, namely, ergs per second per square millimeter of area at 40 inches This gave us fourteen zones extending from 4,100 angstrom units in the visible violet to 2,450 angstrom units in the ultraviolet A combination of these zones in the proper way gave the information desired under the headings intravital, vital and extravital ultraviolet

Table 2—*Ultraviolet Units in Ergs per Second per Square Millimeter of Area at Forty Inches*

Type of Arc Lamp Direct Current	Arc Voltage	Arc Amperage	Arc Length Mm	Intravital 4 000 to 3 200	Vital 3 200 to 2 900	Extravital 2,900 —
Quartz mercury arc (used 200 hours)	75	3 4	5 5	10 981	8 585	4 034
White flame therapeutic carbon A	35	17 0	15	7 803	1 120	0 407
Therapeutic carbon B blue flame iron	35	16 0	13	6 635	2 199	1 441
Carbon C nickel iron aluminum	43	16 0	8	18 651	6 106	3 197
Carbon F red flame strontium fluoride	40	16 0	10	5 188	1 534	0.577
Carbon F tungsten	38	16 0	7	7 332	1 855	1.228
Carbon G nickel	40	16 0	11	10 108	2 441	0 668
Carbon H yellow flame calcium fluoride	40	16 0	12	4.206	1 215	0 439
Carbon K cobalt	40	16 0	15	13 651	1 633	0 763
Carbon A	42	8	10	4 274	0.593	0 213
Carbon B	41	8	12	0 516	0 180	0 118
Carbon C	42	8	8	1 919	0 601	0 329
Carbon F	40	8	18	0 714	0 235	0 091
Carbon G	41	8	3	1 644	0 353	0 009
Carbon H	40	8	13	1 173	0 326	0 118
Carbon K	40	8	5	2 271	0 251	0 130
Alternating current quartz mercury arc (three electrode type) (not rectified)	150	5	120	9 380	11.313	6.286

We are not unmindful of the fact that future study may reveal measurable biologic action of radiation frequencies outside the zone which we have described as vital In fact, we hope ourselves further to analyze measurable biologic activity on the basis of specificity of particular portions of the spectrum For the purposes of this paper, and in view of available clinical sources of ultraviolet as used in therapy, both the concept of vital ultraviolet as here given and table 2 should prove of value to the practitioner

Ultraviolet dosage has been and is empiric

The physician who uses the light sources exactly as given in table 2 has for the first time an actual understanding of the energy in the various zones of the ultraviolet reaching his patient He is now able to compare clinical observations with source characteristics With increasing experience based on the results here reported, some idea of dosage will be formulated

18 East Eighty Ninth Street

DIPHYLLOBOTHRIUM LATUM (LINN, 1758), THE BROAD TAPEWORM OF MAN

EXPERIMENTAL STUDIES *

TEUNIS VERGEER
ANN ARBOR, MICH

The observations and experiments reported in this paper were made during the years 1926 and 1927 for the purpose of studying the occurrence and distribution of *Diphyllobothrium latum* (Linn) in the Great Lakes region with particular reference to Michigan Prof A S Warthin,[1] director of the pathologic laboratories of the University of Michigan, stated that as early as 1897 he had predicted that the broad tapeworm of man would become endemic in the mining regions of the upper peninsula of Michigan, which are populated by immigrants from Finland, Sweden and other Baltic countries where fish are eaten uncooked, either fresh, dried, smoked or "cured" Since 1902, Dr Warthin had occasionally received specimens which caused grave suspicion that this parasite was established in the mining regions of the upper peninsula of Michigan, but up to 1906 its occurrence in the United States except in foreigners was a matter of conjecture Nickerson,[2] in 1906, reported the first native case from Ely, Minn , and since that time several cases have been reported from various places In the report of Nickerson is the first record of the examination of fish for the plerocercoids Concerning some dibothriocephalid larvae which he found, he made the following statement "I have obtained them from fish caught in the Great Lakes, but without feeding experiments to rear the adult worm from the larva it is impossible to determine the species of *Dibothriocephalus* and the probability is in favor of such larvae being of some species other than *latus*—the parasite of man " As Nickerson did not mention the species of fish examined, it is not possible to conjecture concerning his observations Warthin reported finding the plerocercoids in burbot, *Lota maculosa* Le Sueur, from Portage Lake Entry, Houghton County, Mich , adding that "in about one third of the fish of this variety examined numerous measles were found in the peritoneum, liver, and roe sac about the size of a large pinhead, white, and when dissected were found to contain small white wormlike bodies varying in size from 7 to 17 mm and possessing a telescopic headlike end with groove", but "pike were free from it in the same region " He did not perform any feeding experiments

Lyon[3] has summarized the data in all cases of *D latum* known to be of American origin occurring in human beings

METHODS OF INVESTIGATION

The present study involved careful examination of fish from a number of sources, and the feeding of plerocercoids to dogs and cats for the purpose of rearing the adult worms In the examination of the fish for plerocercoids, both the flesh and the viscera of all fish were examined, except of those lake herring which were used for obtaining an additional supply of plerocercoids for feeding experiments Of these, only the stomachs were examined The viscera of every fish were subjected to a close examination, each part being removed after inspection While a close watch was kept for plerocercoids, the liver and reproductive organs and occasionally the spleen were teased into small pieces In order to examine the flesh the skin was generally incised around the head, along the dorsal and ventral sides, and each half was torn off from the anterior to the posterior end The inner surface of the skin and the adhering flesh was examined first, then all the flesh was searched and removed in small particles from the skeleton Everything that in any way resembled a cyst or worm was further examined with the aid of a binocular or compound microscope Some specimens were saved from all lots of plerocercoids found

The dogs and cats used for the feeding experiments were known to be free from tapeworms Whether these animals became infested by the plerocercoids fed

Table 1—*Species of Fish Not Infested with Any Species of Bothriocephalid Plerocercoid in the Localities Indicated*

Time of Examination	Number in Each Lot	Fish Examined	Locality
Summer 1926	16	Great northern pike Esox lucius Linnaeus*	Douglas Lake † Cheboygan County Mich
February 1927	2	Great northern pike Esox lucius Linnaeus*	Lake Erie ‡
March 1927	7	Sand pike Stizostedeon canadense-griseum De Kay	Lake Erie *
April 1927	4	Sand pike Stizostedeon canadense-griseum De Kay*	Lake Erie ‡
April 1927	2	Blue pike Stizostedeon glaucum Hubbs	Lake Erie ‡
April 1927	1	Carp Cyprinus carpio Linnaeus	Lake Erie ‡
March 1927	1	Sturgeon sucker Catostomus catostomus Forster	Lake Erie
March 1927	2	Common sucker Catostomus commersonnii Lacepede	Lake Erie *
February March 1927	21	Yellow perch Perca flavescens Mitchill	Lake Erie *
Summer 1926	30	Yellow perch Perca flavescens Mitchill	Douglas Lake Cheboygan County Mich
Summer 1926	10	Rock bass Ambloplites rupestris Rafinesque	Douglas Lake Cheboygan County Mich
Summer 1926	6	Sunfish Eupomotis gibbosus Linnaeus	Douglas Lake Cheboygan County Mich
March 1927	1	Large mouth black bass Aplites salmoides Rafinesque	Washtenaw County Mich
April 1927	2	Pilot Prosopium quadrilaterale Richardson	Near St Ignace Mich

* Although negative here fish of this species taken in an endemic area were infested
† Ten young up to 15 cm long
‡ Locality stated by local dealer from whom fish were purchased

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* From the Department of Zoology and the Biological Station of the University of Michigan This investigation has been carried on under grant 96 awarded to Profs George R La Rue and A S Warthin by the Committee on Scientific Research of the American Medical Association

[1] Warthin A S Report on the Occurrence of the Fish Tapeworm (Dibothriocephalus Latus) in Michigan, Public Health Mich January March 1912 pp 78 84

[2] Nickerson W S The Broad Tapeworm in Minnesota with the Report of a Case of Infection Acquired in the State J A M A 46 711 713 (March 10) 1906

[3] Lyon M W Jr Native Case of Infestation by the Fish Tapeworm Diphyllobothrium Latum J A M A 86 264 265 (Jan 23) 1926

to them was determined by either or both of two methods, namely, fecal examination and autopsy After the feeding of plerocercoids, a certain length of time was allowed for their development to the egg laying stage, as indicated in the tables, after which fresh feces were collected and examined microscopically by the smear method, i e, a small amount of fecal material was mixed with water on a slide and examined under a cover glass From five to ten smears were made, and if eggs were not found the remainder of the fecal material was thoroughly mixed with water, generally a quart, and time was allowed for any eggs that might be present to settle to the bottom of the container, the suspension then being decanted This was repeated until the water remained clear The sediment was then again microscopically examined The eggs of *D latum* are very heavy and settle readily to the bottom If sufficient time is allowed for sedimentation, no other method can be more accurate

Killing the experimental hosts and carefully examining the whole digestive tract is also a dependable method of determining an infestation and has been used repeatedly by me Chloroform was found undesirable for use in killing the hosts because it causes the tapeworms to break and the parts to pass to the large intestine These effects may be due to violent peristalsis of the intestinal wall Suffocation of the animals in illuminating gas leaves the tapeworms attached to the intestinal mucosa and does not cause breakage The hosts killed in this way are entirely relaxed and there do not appear to be any strong peristaltic movements of the intestine The intestine was opened by means of scissors The tapeworms were collected and gently washed in tap water, straightened out (not stretched), measured, and then fixed in a saturated aqueous solution of mercuric chloride to which a little acetic acid was added They were transferred through graded strengths of alcohol, and preserved in 70 per cent alcohol to which some glycerin was added to keep the tissues soft and prevent drying out in case the alcohol should evaporate Plerocercoids were preserved in the same manner

TABLE 2—*Species of Fish Infested with Bothriocephalid Plerocercoids of Other Species Than Diphyllobothrium Latum*

Time of Examination	Number of Specimens in Each Lot	Fish Examined and Locality Where Found	Number of Plerocercoids Found			Number of Plerocercoids Fed	Experimental Host	Days Allowed for Development	Results
			Average	Minimum	Maximum				
			Located in Stomach Tissues of Host						
		Lota maculosa Le Sueur							
Summer 1926	6	Lake Huron near Cheboygan	12	0	29	30	Dog 1	14	Fecal examination negative
Summer 1926	6	Grand Traverse Bay	1	0	3	5	Dog 2	30	Autopsy negative
November 1926	6	Saginaw Bay	¾	0	2	4	Dog 3	30	Autopsy negative
December 1926	8	Lake Huron near Alpena	1¼	0	3	9	Dog 4	30	Autopsy negative
April 1927	3	Lake Erie near Toledo	0	0	0	0	0		
			Under Peritoneum of Stomach						
		Leucichthys artedi Le Sueur							
February 1927	12	Lake Erie †	4	2	12	30	Dog 5	31	Recovered one mature bothriocephalid at autopsy
March 1927	6	Lake Erie	3	2	5	16	Dog 5	16	
April 1927	14	Near St Ignace	5½	2	13	77	Dog 7	60	Autopsy negative
April 1927	12	Near Bay City	4	0	8	46	Cat 8	57	Autopsy negative
April 1927	10	Lake Huron †	2	1	8	9	Kitten 9	8	At autopsy recovered six immature bothriocephalids
May 1927	16	Lake Huron †	2	0	7	23	Kitten 10	4	Recovered five immature bothriocephalids
May 1927	9	Lake Erie near Sandusky	1+	1	3	9	Dog 11	50	Fecal examination negative
May 1927	24	Lake Superior	3—	0	11	40	Cat 12	41	Autopsy negative
						21	Cat 13	41	Autopsy negative
July 1926	40	Douglas Lake Cheboygan County Mich	0	0	0				
May 1927	25	Near St Ignace Mich	3½	0	7	86	Dog 14	30	Autopsy negative
May 1927	24	Near St Ignace Mich	3+	0	12	70	Dog 15	40	Fecal examination negative
May 1927	25	Near Grand Haven Mich	2½	0	14	88	Dog 16	40	Autopsy negative
May 1927	19	Near Grand Haven Mich	2	0	10				
May 1927	41	Near St Ignace Mich	2	0	7				
May 1927	50	Near St Ignace Mich	4	0	12				
		Leucichthys kiyi Koelz							
May 1927	12	Lake Superior	¾	0	2				
May 1927	12	Lake Ontario	2	0	6				
May, 1927	12	Lake Michigan	0+	0	1				
		Leucichthys zenithicus J and E							
May 1927	12	Lake Superior near Duluth	⅙	0	1				
		Leucichthys nigripinnis Gill							
May, 1927	12	Lake Nippigon Ont	1+	0	8				
May 1927	12	Georgian Bay	0+	0	1				
May 1927	8	Portage Lake Washtenaw County Mich	0	0	0				

* Averages obtained by dividing the total number of plerocercoids by the total number of fish examined
† Locality stated by local dealer from whom fish were purchased

EXAMINATIONS OF FISH FROM THE GREAT LAKES

Michigan, Indiana, Illinois and Minnesota, from which states have been reported all the native cases of broad tapeworm in man that have come to our attention, receive a large part of their commercial supply of fresh-water fish from the Great Lakes and from the lakes of Canada Nearly all cities situated on the shores of the Great Lakes and on the banks of the tributary rivers have water-borne sewerage systems Furthermore, the traffic on these lakes, especially in summer, is very heavy, and daily passenger service has been established between all important harbors For these reasons, fecal contamination must be considerable Therefore, it was deemed necessary to examine many specimens of all the more important food fishes occurring in the Great Lakes Fish were secured from Lakes Erie, Huron, Michigan, Superior and Ontario Many fishes were examined from Lake Erie, because all the Detroit sewage, which might carry eggs of *Diphyllobothrium latum* passed by the many northern Europeans living in that city, goes into that lake, and also because steamship traffic is heaviest on Lake Erie No portion of the Great Lakes was known to be producing fish infested with the plerocercoids of *D latum* In the examinations of the food fishes of the Great Lakes certain plerocercoids were found, but none of these proved to be the plerocercoids of *D latum*

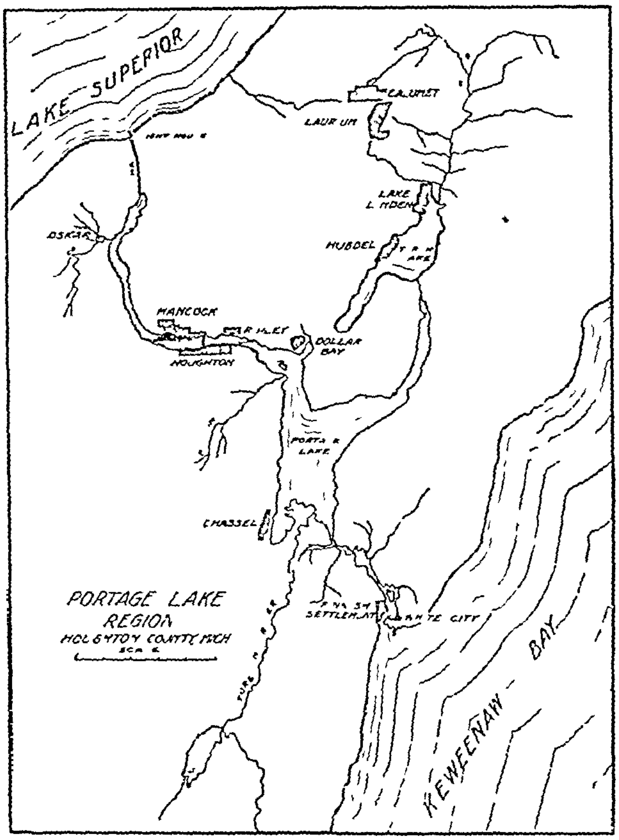
The names and sources of all species of fish examined with negative results are given in table 1 If not otherwise stated in the tables, the fish examined were mature Certain kinds of fish were examined, of which some individuals were infested with one or more bothriocephalid plerocercoids of other species than *D latum* The results of these examinations have been brought together in table 2 One of these species of plerocercoids was found in the burbot *Lota maculosa* Le Sueur, from various localities, and another in the lake herring and in chubs, *Leucichthys* spp The plerocercoids of these fishes and the feeding experiments performed with them are described in a later section of this paper The results of our examinations of the fish of the Great Lakes appear to indicate that these fish do not carry plerocercoids of *D latum*, and that consequently the commercial fish from these lakes are not a factor in the spread of the broad tapeworm It must be pointed out, however, that our examinations covered only a few fishing areas, mostly in Lake Erie and in Lake Huron, and that the total number of individuals and species from any area is too small to yield adequate proof that plerocercoids of *D latum* do not occur in the fish of the Great Lakes We suspect that a low percentage of fish of certain species may be infested, especially near cities

STUDY OF AN ENDEMIC AREA

Since plerocercoids of *D latum* were not found in my examinations of fish from the Great Lakes an investigation was begun of the only suspected endemic area in Michigan, the copper country in the Upper Peninsula, from which region it had been impossible to secure any fish for examination during the earlier part of the study Because Warthin (1912) had reported the finding of plerocercoids in burbots taken from Portage Lake, Houghton County, all the species of food fishes that could be collected from Portage Lake and adjacent waters were examined I found plerocercoids in the wall-eye, *Stizostedeon vitreum* Mitchill, in the sand pike, *Stizostedeon canadense-griseum* De Kay, in the great northern pike, *Esox lucius* Linnaeus, and in the lawyer or burbot, *Lota maculosa* Le Sueur, which by feeding experiments yielded tapeworms that were identified as *Diphyllobothrium latum*

The species of *Stizostedeon* are highly important food fishes In 1922, the last year for which data are available, the total commercial catch from the Great Lakes was 31 430,000 pounds[4] *Esox lucius* is also of some commercial importance The sandpike, the wall-eye and the great northern pike are prized by anglers *Lota maculosa* is not a commercial species of food fish At times it is caught in large numbers especially on set lines, but is killed and thrown back in the lake because there is no market for it In Houghton County, and probably elsewhere, however, it is caught and eaten in considerable numbers by Finnish anglers, who fish for it through the ice

The results of the examinations of these species of fish and of the feeding experiments performed with the plerocercoids secured from them are summarized in table 3 This table also states the number of specimens of various species of fish examined from the same region which were not infested with plerocercoids of *D latum* It shows that plerocercoids of *Diphyllobothrium latum* were not found in other important food fishes, such as lake trout, herring, whitefish and perch According to Schor, the corresponding species of perch and whitefish in Europe, *Perca fluviatilis* and *Coregonus fera*, respectively, are common hosts of *Diphyllobothrium latum* It is therefore the more interesting that, in twenty-seven perch taken from the same localities as the infested pike and in twelve whitefish from Lake Superior, plerocercoids were not found Negative observations in so small a number of fish examined does not prove that plerocercoids of *D latum* may not occur in these fish, but our records at least indicate that they are not common Experiments should be performed to determine whether any other food fishes are capable of serving as hosts for plerocercoids of *D latum*



The Portage Lake region Houghton County Mich an area where Diphyllobothrium latum occurs in the adult stage in man and in the plerocercoid stage in fishes

THE PLEROCERCOIDS AND FEEDING EXPERIMENTS

The plerocercoids of *Diphyllobothrium latum* found in *Stizostedeon vitreum* *Stizostedeon canadense-griseum*, *Esox lucius* and *Lota maculosa* are not encysted, and are found anywhere in the flesh, in adipose tissue among the viscera, in the gonads, and in the walls of the digestive tract In the host, the body of the plerocercoid may be straight or it may have either or both ends folded back on itself The scolex is inverted and is extruded only after prolonged exposure to water The anterior end is marked by an invagination (the scolex withdrawn) and many deep transverse skin folds which posteriorly become further separated and less regular The remainder of the surface is characteristically marked by irregular skin folds which decrease in frequence and depth toward the posterior end The plerocercoids are more or less flattened and tapered toward the posterior end There is no evidence of proglottid formation, either external or internal The preserved plerocercoids vary in length from 1 24 to 29 mm and in width from 0 57 to 2 22 mm

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[4] Koelz W Fishing Industry of the Great Lakes Appendix XI to the Report of the U S Commissioner of Fisheries for 1925 Bureau of Fisheries Document number 1001 1926 pp 553 617

[5] Schor M Contribution a l etude du Bothriocephalus Latus Brems Sa distribution dans le canton de Vaud (These de doctorat) Lausanne, 1902 Reviewed Centralbl f Bakteriol u Parasitenk. 1903 ref part 1 number 13 pp 286 287

In a few older individuals, deep constrictions were noticed that suggested the possibility of asexual reproduction This idea is supported by the results reported by O Fuhrmann[6] The evidence at hand is not conclusive, and the subject requires further study Asexual reproduction should not be thought on *a priori* grounds to be impossible in this species, because it is a common mode of reproduction in other sparganum forms[7]

Several of the plerocercoids that I collected were fed, embedded in a piece of host tissue, to dogs and cats Five dogs and one cat became infested The dogs and cats used were purchased while still nursing, had never received fish as food, and were kept in pens under sanitary conditions One dog was killed sixteen days after the first feeding, and one cat forty days after its feeding From the small intestine of the dog, eight tapeworms were recovered, from the cat, one tapeworm No other parasites were found These worms were carefully compared with, and found to be morphologically identical to, *Bothriocephalus latus* as described by Leuckart,[8] and to three specimens of *D latum* of human origin, namely, one from a case originating in Germany and treated in Houghton County, one from a case in Detroit, and one in the collection of the pathology department of the University of Michigan (LAD 2823) Several fresh eggs from the broad tapeworm of the German patient referred to and from the tapeworms of my dogs were measured and the average, minimum and maximum measurements of the two groups were identical The eggs under similar conditions hatched in the same lengths of time and the coracidia were also morphologically identical The four other infested dogs are still living, and fecal examinations have revealed numerous eggs of *D latum*, indicating heavy infestations All the data in regard to the feeding experiments are given in table 4

TABLE 3—*Fish Examined from Portage Lake and Adjacent Waters, Upper Peninsula of Michigan July 22-Aug 22, 1927*

Number Examined	Fish * Examined	Number of Diphyllobothrium latum Plerocercoids Found: In Flesh	Number of Diphyllobothrium latum Plerocercoids Found: Among Viscera	Number of Uninfested Fish	Locality
79	Wall eyed and sand pike Stizostedeon spp †	29	24	33	Portage Lake between Hancock and Houghton
18	Wall eyed and sand pike Stizostedeon spp †	7	4	7	Portage Lake near Chassel
9	Wall-eyed and sand pike Stizostedeon spp †	3	8	0	Portage Lake near Dollar Bay
32	Wall eyed and sand pike Stizostedeon spp †	12	6	18	Portage Lake near Oscar
1	Wall eyed and sand pike Stizostedeon spp †	3	2	0	Lake Superior 20 miles from Portage Canal
14	Wall eyed and sand pike Stizostedeon spp †	3	2	9	Lake Superior ¼ mile from Portage Canal
2	Great northern pike Esox lucius Linnaeus	1	4	1	Portage Lake between Hancock and Houghton
14	Great northern pike Esox lucius Linnaeus	15	20	3	Portage Lake near Chassel
4	Burbot Lota maculosa Le Sueur	0	1	3	Lake Superior 4 to 10 miles from Portage Canal
27	Yellow perch Perca flavescens Mitchill	0	0	27	Portage Lake
25	Common sucker Catostomus commersonnii Lacepede	0	0	25	Portage Lake
21	Sturgeon sucker Catostomus catostomus Forster	0	0	21	Portage Lake
5	Bullhead Ameiurus m melas (Rafinesque)	0	0	5	Portage Lake
1	Rock bass Ambloplites rupestris Rafinesque	0	0	1	Portage Lake
14	Log perch Percina caprodes zebra Agassiz	0	0	14	Portage Lake
12	Spottail minnow Notropus hudsonius seline Jordan	0	0	12	Portage Lake
3	Cisco Leucichthys artedi tullibee (Richardson)	0	0	3	Portage Lake
5	Lake herring Leucichthys a artedi Le Sueur	0	0	5	Lake Superior ¼ to 4 miles from Portage Canal
28	Longjaws Leucichthys xenithecus J and E	0	0	28	Lake Superior 4 miles from Portage Canal
12	Whitefish Coregonus clupeaformis Mitchill	0	0	12	Lake Superior 4 miles from Portage Canal
26	Lake trout Cristovomer n namaycush Walbaum	0	0	23	Lake Superior 4 to 10 miles from Portage Canal
9	Brook trout Salvelinus f fontinalis Mitchill	0	0	9	Lutz Creek ½ mile from Portage Lake

* I am indebted to Dr C L Hubbs for the identification of these fish

† Later identification of saved specimen proved that Stizostedeon canadense-griseum and Stizostedeon vitreum had been examined promiscuously and that both species were infested

TABLE 4—*Feeding Experiments with Plerocercoids of Diphyllobothrium Latum Collected in Portage Lake Region, Upper Peninsula of Michigan*

Source of Plerocercoids	Location in Host Fish	Number of Plerocercoids Fed	Experimental Host	Date of Feeding	Date of Examination	Days Elapsed	Results
Stizostedeon spp	Flesh	2	Dog 17	7/23	8/8	16	Autopsy August 8 revealed eight specimens of D latum as follows with scolices 42 cm 37 cm 27 cm 08 cm 9 cm 7 5 cm 5 cm 2 1 cm and pieces without scolices totaling 16 cm
Stizostedeon spp	Flesh and viscera	8		7/25		14	
Stizostedeon spp	Flesh	3		7/26		13	
Stizostedeon spp	Flesh	3		7/27		12	
Stizostedeon spp	Flesh	5		7/28		11	
Stizostedeon spp	Flesh	10		7/29		10	
Stizostedeon spp	Flesh	4		8/ 5		3	
Stizostedeon spp	Viscera	26	Dog 18	7/20-8/13	9/9	48-27	Feces contain eggs of D latum
Stizostedeon spp	Flesh and viscera	12	Dog 21	8/13	10/10	58	Feces contain eggs of D latum
Stizostedeon spp	Flesh and viscera	6	Dog 22	8/18	10/ 8	51	Feces contain eggs of D latum
Stizostedeon spp	Flesh and viscera	13	Cat 20	8/9 8/15	9/27	49-43	Autopsy negative
Esox lucius	Flesh and viscera	26	Dog 19	8/5-8/18	9/20	56-43	Feces contain eggs of D latum
Esox lucius	Flesh and viscera	6	Cat 23	8/18	9/27	40	Recovered one D latum 25 5 cm long

The plerocercoids of the other two species can be distinguished at once from *D latum* by their encysted condition, moreover, they were never found in the flesh I have never found the plerocercoids of *D latum* encysted nor have I ever found the others free The plerocercoids of *D latum* were most commonly found in the flesh and less commonly in the viscera

The plerocercoids found in the several species of *Leucichthys* occur chiefly on the stomach, seldom on the intestine or other viscera They are found in small spherical cysts varying from 0 5 to 1 5 mm in diameter and are enclosed by the peritoneum usually of the stomach The cysts may be closely applied to the stomach or suspended on a stalk of peritoneum, occasionally they occur embedded in the stomach wall In rare instances, I have found them under the peritoneum covering the flesh and other viscera. Scar tissues visible in sections of the stomach wall are apparently due to injuries brought about by the penetration of procercoids. The average length of 100 plerocercoids from *Leucichthys* measured 8.15 mm. after fixation; their range in length was from 2 to 26 mm. They seldom exceed 1 mm. in width, being cylindric or only slightly flattened. The scolex is generally extended, and the deep bothria are plainly visible. Both scolex and body are very smooth, lacking the skin folds so characteristic of plerocercoids of *D. latum*. Some of the plerocercoids from *Leucichthys* spp. when fed in my experiments to dogs and cats developed into a species of tapeworm which, I am able to state beyond doubt, is different from *D. latum*. At a distance of 10 cm. from the scolex completely formed eggs were found in the uteri, while in a specimen of *D. latum* 10 cm. long the reproductive organs are entirely undifferentiated. The eggs are considerably smaller than those of *D. latum*. A description of this parasite will be given in another paper.

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[6] Fuhrmann O Encore le cycle du Dibothriocephalus Latus, Rev med de la Suisse Rom **43** 573 575 (Sept) 1923

[7] Stiles C W The Occurrence of a Proliferating Cestode Larva (Sparganum Proliferum) in Man in Florida *Bull 40 Hyg Lab U S P H S* 1903 pp 5 18

[8] Leuckart R Die Parasiten des Menschen und die von ihnen herrührender Krankheiten ed 2 Leipzig and Heidelberg **1** part 1 1886

The plerocercoids found in and on the stomach wall of *Lota maculosa* occur in flattened circular cysts varying in diameter from 2 mm. to about 10 mm. They are coiled up and in general much larger than either of the other species of plerocercoids, reaching a length of 110 mm. and a width of 2 mm. Even when only 20 mm. long they may already have attained a width of 1.5 mm. They are considerably flattened. The scolex is much contracted and wrinkled; however, its bothria are visible. Feeding experiments with four dogs to each of which from four to thirty living plerocercoids were fed proved negative, making it impossible to examine and identify the adult worm. Because of the negative results of my feeding experiments and the characters of the plerocercoid, I am able to state positively that this species is not *D. latum*.

HUMAN INFESTATIONS WITH THE ADULT D. LATUM

While I was in Houghton County one case of human infestation with *D. latum* came to my attention. The patient had come from Germany and was aware of his infestation before entering the United States. Another patient from whose feces I have examined eggs has recently been under observation at the new Thomas Henry Simpson Memorial Institute for Medical Research at the University of Michigan. Records of cases of tapeworms from the medical profession in Houghton County yielded unsatisfactory data, because in general the patient is treated, the worm is passed, the patient is satisfied, and generally does not follow the physician's advice to let him see the worm to determine whether the scolex is present. In order to determine the species of worm passed, it is necessary that the physician see the worm, but often he does not hear from the patient if the treatment appears to have been successful. Since treatment for *Taenia* and the broad tapeworm is the same, many medical men never attempt to determine the species. The physicians in the copper country give chenopodium, aspidium, thymol or pepo (pumpkinseed) emulsion, while kamala is much used by the Finns, who often treat themselves. The more important physicians there each recalled from ten to twenty cases of tapeworm in the last twenty years of practice, and in general they are agreed that tapeworms are not as common as they used to be. My records of examinations of fish also bear witness that the infestation at the present time is not heavy. My records dealing with the species of *Stizostedeon* show that sixty-six out of 153 examined (44 per cent) were uninfested with plerocercoids. Eighty-seven infested fish carried in all 103 plerocercoids, an average of 1.2 plerocercoids each. Of sixteen *Esox lucius*, twelve, or 75 per cent were infested with plerocercoids of *D. latum*. These twelve averaged 3.3 plerocercoids each. On inquiry into the cause of the decline in the number of tapeworm cases in Houghton County, I learned that medical propaganda against the eating of raw fish has convinced at least the younger generation that the practice is unsafe, and now only the older Finns persist in it. One way in which the Finns eat raw fish is to serve it with sour milk, while fishermen eat fish raw with a sprinkling of salt after having removed the skin. The ingestion of any fish not thoroughly cooked may cause infestation. In the camps of summer residents and of hunters in winter, as well as in restaurants, fish is often prepared hastily, and even though well done on the surface may still harbor a living plerocercoid within. The plerocercoids are white, and sufficiently small to be overlooked by the unsuspecting eater.

SEWAGE DISPOSAL

The sewerage systems in Hancock and Houghton are ideal instruments for the speedy transportation of feces carrying broad tapeworm eggs to the lake. Hancock and Houghton are built on the high and steep hills bordering Portage Lake. Most streets running down hill toward the lake have individual sewer outlets opening directly into the lake. The inhabitants fish for the prized pike, *Stizostedeon*, near these outlets and I have obtained several infested fish from these anglers. Since dogs, foxes and cats may also be infested either by eating viscera or raw flesh of fish, they too might be agencies in maintaining the life cycle of *D. latum*. If eggs arrive in water, they develop readily. I succeeded in raising the ciliated coracidia from eggs obtained from the feces of my infested dogs and of the German patient in ten days at room temperature in September.

SPREAD OF THE INFESTATION

This report leaves untouched the question of how infestations with *Diphyllobothrium latum* are acquired among the American born in various cities. As mentioned before, the infested fish may come from the Great Lakes. For control measures, it would be well to investigate thoroughly each known case of human infestation to determine the species and the source of the infested fish. The fish of the suspected areas should then be examined for the plerocercoids of *D. latum*. Resorters and hunters spending their vacations in endemic areas are in danger of carrying infestations away with them. According to the report of the United States Tariff Commission,[9] fresh frozen, salted and smoked fish are imported from the fresh waters of Canada, of which Lake Winnipeg, Lake Manitoba, Lake of the Woods, Lake Winnepegosis, Lesser Slave Lake, Buffalo Lake, Lake Nipigon, and the Canadian side of the Great Lakes are the most important sources (p. 5). In 1924, the last year for which data are available, the commission found that 7,156,395 pounds of yellow pike or wall-eye, *Stizostedeon vitreum*, were imported into the United States (p. 52), nearly all of which were caught in the first four of these Canadian lakes and were shipped fresh, freezing having been prevented during the winter because the Jewish trade in the United States was willing to pay a premium for fresh wall-eyes (p. 53). In connection with these statements, the observations of physicians in regard to the high percentage of infestation with *D. latum* among the Jews become significant so that it is important and necessary that these imported fish be thoroughly examined for the plerocercoids of *D. latum*.

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[9] United States Tariff Commission: Lake Fish, Tariff Information Series number 36, 1927.

The great northern pike, *Esox lucius*, is caught mostly in Lake Winnepegosis and Lake Manitoba. The importation in 1924 amounted to 4,117,310 pounds. At least 80 per cent of the total amount of these and of the wall-eye consumed in the United States are imported from Canada. Both species have been found infested with plerocercoids of *D. latum*, so that the importance of examination of imported fish cannot be stressed too much. My records show that in Lake Superior some infested fish may be taken as far as 20 miles from Portage Canal. How much farther out infested fish may range is unknown, because fish have not been obtained for examination from more distant points. The dissemination of *D. latum* in fish in Lake Superior may be due in part to the indiscriminate deposition of feces in the waters of Lake Superior by infested fishermen, in part to water currents in Portage Lake, caused by eastern or western winds, which carry the eggs, coracidia, and the first intermediate hosts, microcrustacea, into Lake Superior, and in part to the migration of infested fish. The pike, *Stizostedeon*, and the burbot *Lota maculosa*, travel from the Great Lakes up the rivers and inland lakes to spawn. *Stizostedeon* spawns in early summer, some remain in inland waters the year round, but most of them return to the Great Lakes after spawning. *Lota* spawns in early winter, and often does not return until the temperature of the water rises in spring. It is unlawful to take fish from inland waters for commercial purposes. In such waters, however, they may become infested with plerocercoids and after their return to the Great Lakes may be collected for the market. From my experience in the northern peninsula of Michigan, I have no doubt that not only there, but wherever in America the fecal material of immigrants coming from endemic areas in Europe enters lakes and streams by means of waterborne sewage or otherwise, one may expect to find fish infested with plerocercoids of *Diphyllobothrium latum*.

SUMMARY

1. Investigation has demonstrated that the broad tapeworm of man has become established in America.
2. The plerocercoid stage has been found in *Stizostedeon canadense-griseum* De Kay, *Stizostedeon vitreum* Mitch., *Esox lucius* L., and *Lota maculosa* Le Sueur. It was not found in *Perca flavescens* Mitch.
3. The Portage Lake region in the northern peninsula of Michigan with a considerable Finnish population is an endemic area from which infested fish range at least 20 miles into Lake Superior.
4. Fish taken from inland waters are not shipped commercially, and thus do not have any part in the spread of the infestation outside the endemic area with the exception of those caught and consumed by summer residents and other visitors. The movement of infested fish from Portage Lake out into Lake Superior brings these fish into the range of commercial fishing operations, and thus they may be a factor in the dissemination of the infestation in the territory to which fish from this region are shipped.
5. *D. latum* has been raised from the plerocercoid stage to the adult form in five dogs and one cat.
6. *Leucichthys* spp. from the Great Lakes are infested with another species of bothriocephalid plerocercoids, while *Lota maculosa* may be infested not only with the plerocercoids of *D. latum* but also with those of a third species of bothriocephalid not yet determined.

CARDIAC PAIN IN RHEUMATIC FEVER *

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Many clinical observers of patients with rheumatic fever have noted that "heart pain" is a fairly common symptom, and most physicians appreciate the great frequency with which the heart is involved in this disease, but few, if any, statistical studies have been made with the object of correlating these two phenomena. It is our purpose in this communication to present the results of a study extending over several years to determine whether any such correlation exists.

The data have been collected as follows. Each day there has been noted on the temperature chart the existence of precordial pain and hyperesthesia during the entire period of each patient's hospitalization. Special features of these signs were recorded in the bedside notes along with other observations concerning the state of the heart. Frequent electrocardiograms have furthermore permitted us to detect abnormalities of heart action that might otherwise have been missed. The constant correlating of all these data on a single chart, together with other signs and symptoms of the disease, has led us to regard precordial distress and hyperesthesia as very significant of cardiac involvement.

The complaint of "pain in the heart" or "pain over the heart" is probably one of the most frequent symptoms encountered in general practice. It runs a gamut of intensity from the slight, almost negligible, precordial discomfort attending some emotional anxiety to the severe distress of coronary thrombosis. It doubtless has as causative factors not only pathologic conditions in the heart or aorta, but also abnormal states of the nervous systems, both cerebrospinal and vegetative. The association of altered cardiac sensation with grief or other psychic depression has been long recognized and called poetically a broken or heavy heart; likewise, the feeling of mental elation has given rise to the expression light-hearted.

In any study of altered cardiac sensation, therefore, the existence of such extraneous factors, entirely apart from the disease under investigation, must be recognized, and their relative importance in the production of symptoms must be evaluated. For instance, precordial distress and cardiac overactivity occurring coincidentally with menstruation in a woman with rheumatic fever should be discounted if the history reveals similar sensations accompanying the menstrual period during intervals of freedom from infection. On the other hand, it must be remembered that with catamenia one not infrequently observes relapses of a quiescent rheumatic fever; the occurrence of precordial symptoms together with other evidence of renewed activity of the rheumatic infection should under such circumstances be regarded as significant.

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* From the Hospital of the Rockefeller Institute for Medical Research.
* Read before the Association of American Physicians at the Forty Second Annual Meeting, Atlantic City, May 3, 1927.

Similarly, the complaint of precordial distress in a patient who has previously suffered from the syndrome known as "disordered action of the heart" has less diagnostic significance than similar symptoms in a child unaware of the existence of this organ. In evaluating our observations, therefore, the history of the patient before the onset of his illness and the emotional balance of the individual we are studying must be taken into consideration.

The duration and intensity of precordial symptoms vary within wide limits. Occasionally, without a history of any discomfort previous to the time of examination, the physician will notice that the pressure of the stethoscope is not well borne by the patient, or that attempts to localize the apex impulse by palpation or to outline the cardiac borders by deep percussion cause him discomfort. Again, the patient himself may observe that when he lies in the left lateral position, with the precordium pressing on the bed he becomes conscious of uncomfortable sensations over his heart, which are not experienced when the posture is changed. Such symptoms are, of course, to be considered as evidence of hyperesthesia over a portion of the cardiac Head's zone. Objective symptoms of this type are, however, much more rare than the complaint of cardiac pain or discomfort arising spontaneously during the course of the acute disease. In children, after a mild polyarthritis, the first indication of cardiac involvement may be discomfort over the left anterior portion of the chest, sometimes so mild as to escape mention unless especially inquired after, at other times so severe that the patient cannot rest without a sedative. In adults, on the other hand, the precordial symptoms usually do not occur until other signs of severe general infection have developed. The intensity of the symptoms arising from the joint involvement may be so great that the relatively milder cardiac pain may be overlooked unless the examiner is on the alert to detect it. In the polycyclic type of rheumatic fever there may be relatively little polyarthritis at the time of the relapses but much more severe cardiac discomfort, this perhaps indicates that a relative immunity of the tissues of the joints has been induced, while the heart is still being injured by the infection.

Generally, the discomfort is fairly well localized to the precordium and in many instances to the apical region, but at times, when more intense, it is referred to the shoulder, the left axilla and down the inner side of the left arm. In a few instances we have observed recurring pain in the left shoulder which was ascribed to persisting inflammation in that joint, but concomitant precordial pain with other evidence of active carditis led us to suspect that the shoulder pain was referable to a diseased heart, and our suspicions were confirmed by the disappearance of the shoulder pain with the improvement in the action of the heart.

In the presence of severe infection with evidence of profound cardiac involvement, the whole picture may resemble an attack of angina pectoris. In such instances there is usually a marked involvement of the aortic valve, undoubtedly with lesions in the adventitia of the aorta itself, as described recently by Pappenheimer and von Glahn[1].

One rather characteristic feature of the precordial symptoms of rheumatic fever is their occurrence as a rule in the absence of physical exertion. There is, of course, hyperactivity of the heart as a result of the general intoxication, probably in association with some special involvement of the myocardium, but as a rule the cardiac pain arises without any externally ascribable cause.

In order to obtain some idea of the relation of precordial symptoms to the intensity of the disease, we have divided our cases into groups according to the most outstanding symptoms. In general, three large groups may be recognized (1) those in which migratory polyarthritis is a prominent feature, (2) those in which subcutaneous nodules indicate the chronic, low-grade nature of the process, and in which the type of the patient's response to the infectious agent is chiefly proliferative rather than exudative, and (3) those in which carditis is an outstanding clinical feature. Obviously, each group contains cases that have some of the features of the other groups, but for the purposes of this study such a classification is of value. Group 1 has been subdivided into (*a*) the monocyclic type, in which the entire course of the polyarthritis, fever and other signs of active infection lasted only about two weeks, and (*b*) the polycyclic or continuous type, in which the infection lasted longer with a tendency for the joints to be reinvolved or other signs of infection to reappear, often this reactivity showed definite cycles at other times its course was irregularly continuous. This type has been further subdivided into subtypes, the first containing patients who were passing through their first attack of rheumatic fever and the second containing those who had had definite attacks before the one recorded at this time. In the group of patients with carditis, the designation "pericarditis recovered" is self explanatory, the cardiac group includes patients, admitted chiefly because of signs of active rheumatic cardiac disease, who recovered from the attack before discharge from the hospital. All the fatal cases were cardiac in nature, and include two patients with subcutaneous nodules, two with nodules and pericarditis, and three with pericarditis, who were not included in the other groups.

Naturally, in a study extending over seven years, a patient may have been admitted two or more times, and hence be classified first in one group and then in another. But such reclassifying was not done unless it seemed probable that the patient had recovered from his previous attack before being readmitted a second or subsequent time.

The number of patients in each group and the percentage with precordial symptoms is shown in chart 1. It is evident at once that the incidence of these symptoms increases hand in hand with the liability to cardiac involvement as indicated by the severity of the infection. Thus, 37 per cent of the ninety-six patients with polyarthritis had precordial pain or tenderness, while 80 per cent of fifty-eight patients with carditis or nodules had precordial symptoms. Here the nodule is included with the carditis because it is well known that patients with subcutaneous nodules practically always have cardiac involvement.

When the cases are considered by subgroups, the significance of precordial symptoms in relationship to cardiac involvement is still more strikingly brought out. There is a steady increase in the proportion of patients showing this symptom from the lowest for the monocyclic group to the highest for those with pericarditis.

In patients with nodules, pericarditis or signs of cardiac disease sufficiently severe to confine them to bed, there is little ground for argument against the significance of precordial pain as indicative of disease of the heart In the patients with polyarthritis, on the other hand, additional evidence is required to convince the skeptic that this symptom is significant of cardiac involvement This evidence may be divided into two categories (1) objective, bedside signs pointing to some abnormality in the heart, and (2) instrumental, in our cases consisting of electrocardiograms

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[1] Pappenheimer A M and von Glahn W C Lesions of the Aorta Associated with Acute Rheumatic Fever and with Chronic Cardiac Disease of Rheumatic Origin J M Research **44** 489 (Sept) 1924

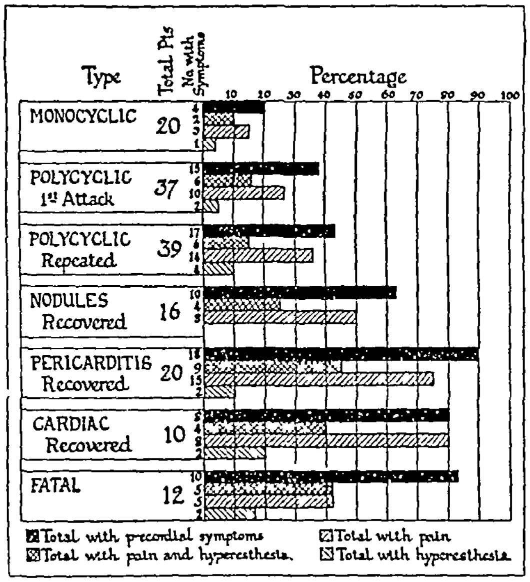

Chart 1—Proportion of patients showing precordial pain and hyperesthesia in various types of rheumatic fever

Among the clinical signs may be mentioned marked changes in the pulse rate out of proportion to the fever, changes in the cardiac rhythm or changes in murmurs New murmurs may appear or murmurs previously present may disappear, diminish in intensity or become louder The most frequent change in rhythm is the appearance of a marked gallop due to a diastolic extra sound which approximates the second sound in quality Numerous ectopic beats are frequently observed A partial heart block is fairly common, and may be suspected by the regularity with which a dropped beat can be detected In three patients we have observed auricular fibrillation of several days' duration, all of them had pericarditis

It is more convenient to get clinical evidence of cardiac involvement than to make instrumental examinations At times the precordial symptoms are of only a few hours' duration, hence it may be impossible to take electrocardiograms It has been more convenient to make these records as a routine twice a week than every time a symptom appears, therefore, in a number of instances in which there was precordial pain, simultaneous electrocardiographic tracings were not obtained

Electrocardiographic evidence of cardiac involvement in rheumatic fever has been observed by a number of clinicians, and discussed fully elsewhere[2] The alterations in the electrocardiogram which were used in the present study were prolongation of the P-R time of 0 04 second or more, bundle branch blocks, numerous ectopic beats, distinct alterations in the directions of the T-waves, and significant changes in the Q-R-S complex

The relation of precordial symptoms to other signs of cardiac involvement in the forty-six patients with polyarthritis is shown in the accompanying table Among these patients seventy-five distinct bouts of precordial pain were noted, and in two thirds of these there was either clinical or electrocardiographic evidence of cardiac abnormality occurring at the time of the bout In one third of them, both types of evidence were recorded No evidence of cardiac involvement was obtained in twenty-six of the attacks, but in twenty-one of these we detected within a few days or weeks definite evidence of such involvement, in three additional instances there were no observations during the period of pain, but later there were signs of cardiac abnormality In only two patients with cardiac pain was there never any other evidence of cardiac involvement In a large majority of cases, therefore, the precordial symptoms and cardiac signs indicated that the heart had been involved by the infection

We have also investigated the relationship between cardiac symptoms during the acute attack and later signs of permanent injury to some portion of the heart In general, permanent injury is most easily detectable in deformity of the valves giving rise to murmurs Unless scars resulting from myocardial lesions are very numerous or situated so that they involve portions of the conduction system, they probably are not detectable until the tissue can be examined histologically Clinical signs of bands of adherent pericardium are rare and difficult of interpretation Scars of the valves resulting from verrucous endocarditis and rheumatic valvulitis, on the other hand, usually result in such malapposition of the leaflets that persistent murmurs are set up Such murmurs, which we have interpreted as indicating valvular disease, have therefore been taken as signs of permanent injury to the heart In many patients the slighter degrees of valvular deformity seem to have been stationary, and the patient has carried out his usual tasks without symptoms referable to cardiac insufficiency

We have been able to follow the large majority (93 per cent) of our patients for periods varying between six months and six years, and have compared the relative frequency of permanent valvular injury in those having cardiac pain or hyperesthesia with those not having these symptoms during the acute fever The results are presented graphically in chart 2 It is evident that taken as a whole, the group of patients with precordial symptoms during the acute disease had a much higher proportion of permanently injured valves than did the group free from symptoms The two groups were of almost the same size, hence the figures probably have real significance All the subgroups except the small group with pericarditis showed the same tendency Of special interest was the first attack

Correlation of Precordial Pain and Tenderness with Other Signs of Cardiac Involvement in Forty-Five Patients with Polyarthritis or Nodules

Number of attacks of precordial discomfort	75
Combined clinical and electrocardiographic evidence of cardiac involvement	24
Clinical evidence alone of cardiac involvement	21
Electrocardiographic evidence alone of cardiac involvement	4
No clinical or electrocardiographic evidence of cardiac involvement at time of pain but later evidence of cardiac involvement	21
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[2] Cohn, A E and Swift H F Electrocardiographic Evidence of Myocardial Involvement in Rheumatic Fever J Exper Med 39 1 (Jan) 1924

in the polycyclic group in which permanent valvular injury occurred three times as frequently in patients with precordial pain as in those without Here one can be reasonably certain that the cardiac injury took place at the time of the acute fever and was not the result of injury inflicted in previous attacks In this group, therefore, the occurrence of precordial symptoms seems to point to a more severe type of cardiac involvement

If the group with polyarthritis is considered as a whole, the prognostic significance of precordial pain and hyperesthesia is well brought out Seventy-one per cent of this group with these symptoms had permanent valvular disease, while only 33 per cent of the patients who were free of these symptoms had persistent signs of injury to the valves

It is well known that patients with subcutaneous rheumatic nodules have a great tendency to severe carditis While the number of our patients showing this syndrome may be too small for statistical treatment, still the results are in accordance with those of the other groups If to the number here charted there be added four fatal cases in which severe precordial pain was noted and death resulted from cardiac failure, the proportion showing permanent cardiac complication and precordial pain would be brought up to 92 per cent

It is doubtful whether the patients with pericarditis should be included in this tabulation, for it has been our experience that all such patients have severe acute cardiac disease It is of interest that the two patients with pericarditis who recovered without subsequent evidence of valvular defect had, during their attack of acute pericarditis, a transitory auricular fibrillation which persisted for from ten to twelve days

COMMENT

In few domains of medicine is there more controversial opinion than exists concerning the causation of cardiac pain One reason for this lies in the necessity of approaching almost the entire subject through the medium of clinical observation, since it is obviously impossible to investigate many of its phases in anatomic, physiologic or pathologic laboratories To attempt to elucidate any aspect of the problem by applying evidence obtained from the study of a condition as mysterious as rheumatic fever would seem to promise little save further to confound confusion Yet if the subject must be finally settled by clinical investigation, it may be of value to apply the results of such investigations as they become available

There can be little doubt that cardiac pain during the course of rheumatic fever points usually to involvement of some portion of the heart in the rheumatic process, for the parallelism is striking between the occurrence of this symptom and the presence of other evidence of rheumatic heart disease Even though we may not understand fully the nature of the rheumatic process, sufficient evidence has been gleaned concerning its gross and minute evolution to enable us to formulate a satisfying theory of the manner in which the anatomic damage is wrought Pain, however—the end-result in consciousness of the effect of an irritating stimulus on sensitive tissue—cannot be studied at the necropsy table, and morphologic analyses can do little more than supply hints which may be of value in formulating hypotheses Such a hint is to be found in the characteristic perivascular and adventitial situation of the rheumatic lesion As this lesion, however, is widely spread throughout the vascular system, it becomes necessary to examine individually the different tissues concerned with respect to their capacity to give rise to painful sensations Particularly must we consider (1) the endocardium, (2) the myocardium, (3) the conduction system, (4) the epicardium and pericardium, (5) the coronary vessels, and (6) the aorta, especially its adventitial coat, any or all of these tissues may be involved during the course of acute rheumatic fever

It must be admitted at the outset that our knowledge of the anatomy and physiology of the nerve supply to these structures is still in process of evolution, and that in consequence such conclusions as we may draw are in the main tentative

The actual presence of nerve fibers in the adventitia of the coronary arteries has been a matter of knowledge for several decades,[3] and on the basis of morphologic differences it has been considered that at least two distinct functions are subserved by them The presence of end-organs of a type usually associated with sensory nerves has led to the conclusion that one group of these fibers is concerned in centripetal conduction Similar end-organs of the "sensory" type have been found in the adventitia of the aorta[4] and in the pericardium[5] To our knowledge, they have not yet been discovered in direct relationship with muscle fibers themselves There are, therefore, well attested anatomic paths through which impulses could be conducted toward the central nervous system But here the limitations of the method become apparent, and other types of evidence must be sought to demonstrate that these pathways are actually the ones concerned in the genesis of heart pain

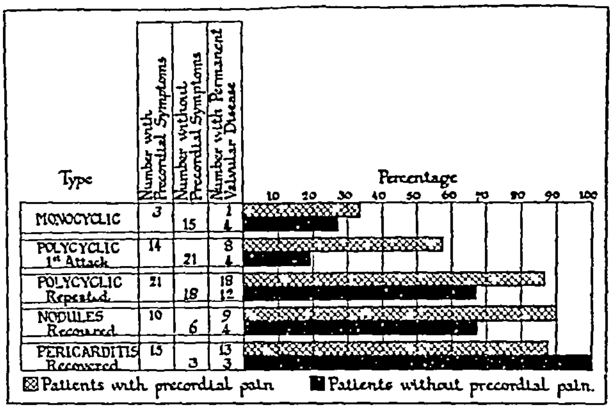

Chart 2—Relation of pain during acute stages of rheumatic fever to later valvular disease

Recent investigations conducted in laboratories of physiology and experimental surgery have yielded valuable additions to our knowledge of the sensitiveness of the various tissues comprised within the vascular system Odermatt[5] has adduced much evidence that arterial endothelium is insensitive to chemical irritation, and that only when the noxious agent is introduced into the adventitia are painful sensations produced Similar results are reported by Müller[6] Singer[7] has recently cance of precordial pain as indicative of disease of the heart In the patients with polyarthritis, on the other hand, additional evidence is required to convince the skeptic that this symptom is significant of cardiac involvement This evidence may be divided into two categories (1) objective, bedside signs pointing to some abnormality in the heart, and (2) instrumental, in our cases consisting of electrocardiograms

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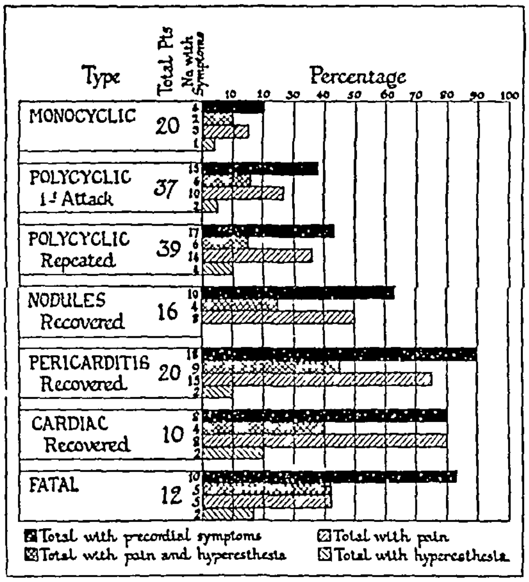

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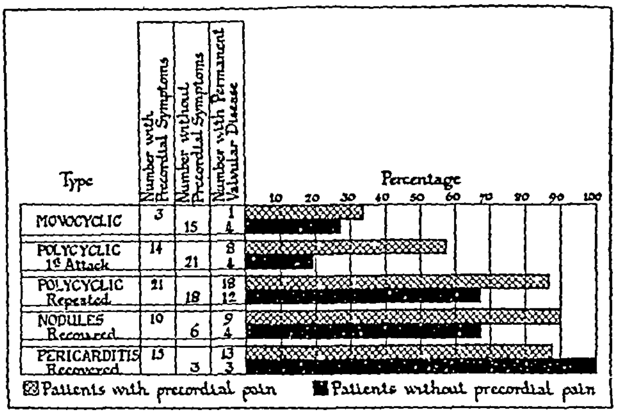

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Under pathologic conditions several types of stimulus may be considered as active In any disease characterized by toxemia it is conceivable that the circulating noxium might reach the adventitial structures either by direct passage through the vessel wall or by way of the vasa vasorum and there excite pain from direct irritation of the nerve terminals The role of such a toxin[8] in rheumatic fever has not been sufficiently studied to permit us to pass final judgment on this point But as to the existence of perivascular edema and infiltrations in this disease there can be no dispute, neither can there be question as to the adequacy of the inflammatory process to cause suffering when it exists in sensitive areas Years ago Longcope,[9] in discussing the anginal attacks of syphilitic aortitis, called attention to the adventitial location of many of the lesions in this condition, and argued convincingly that the pain might with much reason be ascribed to the presence of the inflammatory process there rather than to the anatomic end-results of the condition There seems to be no valid reason why the adventitial and perivascular exudative reactions of rheumatic fever, occurring both in the coronary arterioles and in the aorta, may not well give rise to disagreeable sensations and at times to acute anginal distress The more widespread the lesions, in general, the more persistently and acutely will discomfort manifest itself, particularly in cases in which the highly sensitive aortic adventitia is implicated This is borne out by the tables and charts here presented, showing that cases of the type in which such damage is most constantly wrought are exactly those in which this symptom is most frequently present

The relation of pain to pericarditis deserves special discussion It is our opinion that this pain is not due to the mechanical irritation of the rubbing of one roughened pericardial surface on the other, but rather to the intensity and nature of the underlying inflammatory process Many clinicians have heard loud precordial rubs in patients who were entirely free from any sensation referable to the heart Recent experimental observations have shown that the pericardium is insensitive to trauma by sharp instruments, and that the effective stimulus for pain production is rather the injection of an irritating substance or else the stretching of the tissue by mechanical means Not infrequently, autopsy examination has revealed extensive purulent pericarditis in subjects who have never had precordial pain, nor were precordial friction rubs heard during life Severe pain, on the other hand, may be present before there is any clinical evidence of pericarditis Loeb[10] has recorded several cases in which precordial and epigastric pain were of such a nature that the diagnosis of perforated gastric ulcer led to laparotomy, and the true nature of the underlying cause was only revealed later, when unmistakable signs of pericarditis appeared In several cases we have observed pain as severe after the disappearance of the friction rub as during its pressure Rheumatic pericarditis is practically always accompanied by evidence of involvement of the valves and myocardium in the infectious process In the presence of valvulitis and myocarditis of equal severity with freedom from pericarditis, one encounters similar precordial pain It seems, therefore, that the precordial symptoms which have been described and attributed to pericarditis by many observers are merely indicative of the severity of the pancarditis

One cannot, of course, lightly dismiss the myocardium from consideration, in view of the prominence it has long held in discussions of angina pectoris To Mackenzie[11] we owe the concept that acute ischemia of the muscle resulting from coronary spasm is directly responsible for the acute agony of this condition, and in support of this idea he has marshaled a formidable array of valuable clinical observation Nor has there been any lack of substantiating argument for this hypothesis, and parallels have been drawn particularly with the condition of intermittent claudication The behavior of the muscles of an extremity following the interruption of the arterial blood supply by a compressing band has been studied and interpreted in favor of this concept However, the idea has not gone unchallenged, and it has been argued that the pain arising in muscle, through which for any reason the free flow of blood has been hindered, is not necessarily the direct attribute of the ischemia[12] Such factors as venous stasis, accumulation of metabolites, and arterial spasm have been regarded as primarily responsible, and the vascular adventitia rather than the muscle fiber has been indicted as the sensitive tissue As already noted, direct irritation of the myocardium has failed to elicit evidence of pain Acute ischemia of the myocardium, whether produced by ligating a coronary vessel or by injecting such materials as lycopodium spores or metallic mercury into the coronary circulation has been unaccompanied by distress except such as was directly attributable to the trauma of handling the vessel[1] Such considerations, in our opinion, render problematic the direct role of the muscle in the production of heart pain, and serve rather to strengthen our belief in the paramount importance of the perivascular and adventitial lesion as the nidus of irritation

As to the paths followed by the centripetal impulses from the heart and aorta, experimental work[13] indicates that their course is to the stellate ganglions, and thence to the spinal cord via the rami communicantes *of the eighth cervical to third dorsal nerves, inclusive*

The constant reference of the painful sensations to the left chest is of some interest as it may reflect the well known predilection of the rheumatic process for the left side of the heart Observations indicate that it is through the left stellate ganglion alone that impulses from this side of the heart are transmitted The mechanism of the final superficial distribution of the pain and hyperesthesia has been adequately considered by others, and need not concern us here

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[8] Birkhaug K E Bacteriologic Studies in Acute Rheumatic Fever With Reference to Soluble Toxin Production Proc Soc Exper Biol & Med **24** 541 1927 J Infect Dis **40** 549 (May) 1927

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[13] Singer R Ueber die Schmerzempfindlichkeit des Herzens und der grossen Gefasse und ihre Beziehung zur Angina pectoris Wien Arch f inn Med **14** 113 (March) 1927

SUMMARY AND CONCLUSIONS

The syndrome of precordial pain and hyperesthesia was often encountered in patients with rheumatic fever The frequency of this syndrome was roughly proportional to the intensity of the rheumatic infection It was found in a higher percentage of patients in their second or subsequent attack than in the first attack

Two thirds of the patients with precordial pain presented concomitantly other evidence of cardiac involvement, and almost all of the remainder showed similar evidence of cardiac involvement some time during the period of infection

A higher percentage of patients with precordial pain during the acute infection had permanent valvular injury than those who were free from pain

While freedom from cardiac pain did not insure freedom from cardiac involvement, the great frequency with which the two were encountered together indicates that cardiac pain manifested by a patient with rheumatic fever should be regarded by the physician as a special indication for treatment calculated to safeguard the heart

Sixty-Sixth Street and Avenue A

THE TREATMENT OF NAUSEA AND CERTAIN RELATED CIRCULATORY SENSATIONS

PHARMACOLOGIC BASIS FOR THE THERAPY *

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AND
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Our purpose in this paper is to discuss the control of nausea and certain closely related sensations These sensations are variously described by patients as dizziness, lightness of the head, pressure in the head and neck, mental numbness and headache They often appear associated with nausea, but frequently exist independently In fact, an observing patient, even when questioned carefully, may be unable to relate such sensations to nausea

The direct relationship to vomiting, however, has been shown by the senior author [1] In the previous study, vomiting was divided into two stages one of regurgitation in which the bowel contents are returned to the stomach, and a second one, of emesis, in which the stomach is emptied These stages are separate and distinct Each develops its sensory and motor pattern, and each may exist with or without the other Further evidence of the participation of the duodenum and intestines in vomiting has been presented recently by Alvarez [2] and by Wheelon [3]

Nausea was considered a sensation resulting from abnormal duodenal motor activity, most probably duodenal antiperistalsis This view also has received support in a case report by Fitzgibbons [4] The related sensations were considered phenomena secondary to the duodenal antiperistalsis and were conditioned on the reflex spread of the stimuli into the cardiovascular fields They were regarded, therefore, as of circulatory origin, but no attempt was made to analyze the mechanism further It is well established that duodenal regurgitation of chyme occurs normally and is considered by some authors [5] important in reducing the gastric acidity of the interdigestive phase When such a normal process exceeds a certain degree of vigor, it becomes pathologic If, however, the receptive field is hypersensitive, then an antiperistaltic wave of normal vigor may function as a pathologic one and produce the sensation of nausea If, on the other hand, the circulatory mechanism is abnormally unstable, as in the cases of so-called vasomotor instability (hyperthyroidism, menopause, dysmenorrhea, migraine and similar conditions) then a given antiperistaltic wave may induce circulatory sensations and the patient will complain of dizziness [6] or other related sensations From such reasoning it can be seen that a patient may experience, without nausea, any one of the related sensations In presenting this discussion, no apology is offered for outlining a therapeutic attack on a group of sensations, since it is quite important to extend comfort to a patient while a diagnosis is being made

PHARMACOLOGIC BASIS FOR A THERAPY

The problem, therefore, is essentially one of treating certain phases of vomiting Reference to any textbook of therapeutics or to the more recent articles by Fantus [7] and Desnoes [8] will show that a large number of drugs are available The question is, Which of these should be selected? Three helpful generalizations may be made

1 Since nausea and the related sensations originate from the same stimulus which spreads into different central fields, the treatment for all is essentially the same

2 Duodenal motor dysfunction (antiperistalsis) must either be reduced quantitatively or be changed into analward peristalsis

3 If the motor dysfunction (antiperistalsis) persists, then the reflexes concerned should be blocked off from their central connections The maintenance of the dysfunction will then depend entirely on a peripheral mechanism

For the establishment of an analward peristalsis, a cathartic seems to be indicated This, indeed is the usual treatment which the layman administers to himself, and when he secures relief by a bowel movement he assumes that he has had a "stomach headache" Unfortunately, when the symptoms are pronounced, the cathartic often induces emesis and aggravates the complaint If relief is secured, then the repeated use of cathartics establishes a vicious cycle through their effect on the colon The senior author [1] has demonstrated that a dilute (5 per cent) solution of disodium phosphate injected into the duodenum of a dog causes

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* From the Department of Medicine University of Illinois College of Medicine

[1] Keeton R W Nausea and Related Sensation Elicited by Duodenal Stimulation Arch Int Med **35** 687 (June) 1925

[2] Alvarez W C Reverse Peristalsis in the Bowel A Precursor of Vomiting J A M A **85** 1051 (Oct 3) 1925

[3] Wheelon H K Radiographic Observations Following the Direct Injection of Barium into the Human Duodenum J A M A **80** 615 (March 3) 1923 Symptoms Associated with Duodenal Retention and Inverse Motility, J A M A **86** 326 (Jan 30) 1926

[4] Fitzgibbons J H Reverse Peristalsis Associated with Nausea J A M A **85** 1889 (Dec 12) 1925

[5] Rehfuss M E and Hawk P B The Interdigestive Phase or the Principles Governing the Phenomena of the Resting Stomach J A M A **76** 564 (Feb 26) 1921

[6] At this point the authors wish to distinguish clearly between the sensations under discussion and the rotatory type of dizziness which results from a lesion in the vestibular apparatus or its central communications This type of vertigo is specifically excluded from the discussion

[7] Fantus Bernard Treatment of Vomiting J A M A **81** 17 (July 7) 1923

[8] Desnoes P H Seasickness J A M A **86** 319 (Jan 30) 1926

a peristaltic wave, a stronger solution (15 per cent) causes a regurgitation of duodenal contents In keeping with this, it has also been found that in patients with a very irritable duodenum only the most dilute solutions of disodium phosphate could be injected without precipitating a wave of regurgitation and nausea Lehman and Gibson [9] have advocated the oral administration of from 50 to 300 cc of 2 per cent sodium chloride solution for vomiting This, in reality, is a mild cathartic One must therefore conclude that any cathartic which will prove helpful must be given in small doses and in dilute solution A dilute solution of disodium phosphate meets this requirement

Table 1—*Inhibitory Effect of Sodium Bromide* *

	Bromide				Vomiting	
Dog	Dose Mg per Kilogram	Method of Administration	Food Relation	Interval in Minutes Before Apomorphine	Occurrence	Time in Minutes After Apomorphine
1	2 0	Oral in milk	Fasting	161	0	
2	1 0			158	0	
2	0 5			180	0	
1	0 5			120	+	5
2	0 25			130	+	9
1	0 5	Oral in milk	Food†	162	0	
2	0 25			162	0	
1	0 25			140	0	
2	0 12			143	0	
1	0 06			60	+	20
2	0 03			60	+	15
1	0 06	Intravenous	Food	93	+	9
2	0 06			96	0	

* Stimulating dose apomorphine 0 05 mg per kilogram subcutaneously

† Usual daily meal given four hours previously

A second attack on the symptoms may be directed toward the disorganization of the reflexes involved in the antiperistalsis and toward limiting their central spread It is not necessary to destroy the individual units of a reflex to inhibit its activity On the contrary such a destruction may be attended with considerable danger to the patient Thus, ether, administered in quantities sufficient to break synaptic connections, induces the state of "surgical anesthesia", when it is pushed to the abolition of the individual reflexes, the state of "bulbar paralysis ' A drug which dissociates reflexes should therefore be chosen In 1882, Albertoni [10] demonstrated that sodium bromide alone or combined with chloral possesses this pharmacologic action He determined the minimal electrical stimulus when applied to the motor cortex of the experimental animal necessary to cause a generalized convulsion He then showed that by the use of increasing doses of sodium bromide or sodium bromide and chloral, the effect of the stimulation could be reduced to a convulsive twitching of one extremity or of the individual muscles of that extremity More recently, Tatum and Collins [11] have shown that intravenous injections of soluble barbital U S P (barbital sodium) and paraldehyde inhibit cortical convulsions induced by cocaine This again is doubtless an instance of reflex dissociation Hatcher and Weiss [12] have shown that the action of apomorphine in inducing vomiting was not due primarily to a stimulation of the vomiting center but to a facilitating and a sensitizing action on the reflex mechanism, so that normal stimuli could spread convulsively through it, inducing the vomiting storm Its action on this organized reflex is analogous to the action of strychnine on the cord in producing convulsions of the skeletal musculature Apomorphine would therefore render the spread of a stimulus easier and the radiations wider The inhibition of vomiting induced by apomorphine should prove an excellent test for the efficacy of sodium bromide, soluble barbital or paraldehyde in causing a dissociation of the mechanism involved

EXPERIMENTAL RESULTS

The minimal emetic dose of apomorphine was found in three dogs (of 25, 18 and 17 Kg) to be 0 05 mg per kilogram This dosage was always effective throughout the experimental period, as was shown by repetitions of it and by failures of the experimental drug to inhibit its action The inhibitory effect of sodium bromide may be easily seen by referring to table 1 It will be noted that the same dose of sodium bromide was more effective when given to an animal that had been fed than when given to a fasting one

If the dosage shown in this table is applied to man it will be seen that for a man of 132 pounds (60 Kg) the emetic dose of apomorphine would be 3 mg (one-twentieth grain), and the inhibitory dose of sodium bromide, from 4 to 7 Gm (60 to 105 grains) This dosage of bromide is one that is not infrequently used clinically in cases of severe vomiting, over a period of twelve hours

Table 2—*Inhibitory Effect of Soluble Barbital Paraldehyde and Atropine* *

		Time Interval Minutes Between Injections of Drugs and Apomorphine	Vomiting		
Dog	Drug and Dose Mg per Kg †		Occurrence	Latent Period Minutes	Comment
1	Soluble barbital 20 0 Paraldehyde 20 0 Atropine 0 02	67	0		Slight unsteadiness
2	Soluble barbital 20 0 Paraldehyde 20 0 Atropine 0 02	65	0		Slight unsteadiness
1	Soluble barbital 20 0 Paraldehyde 20 0	65	Mild	20	Unsteadiness flushing of nose
2	Soluble barbital 20 0 Paraldehyde 20 0	65	0		Unsteadiness flushing of nose
1	Soluble barbital 20 0 Atropine 0 02	74	Moderate	15	
2	Paraldehyde 20 0 Atropine 0 02	72	Severe	5	
1	Paraldehyde 40 0 Atropine 0 02	67	Severe	7	
2	Paraldehyde 40 0 Atropine 0 02	63	Severe	13	
1	Soluble barbital 20 0	64	Mild	30	Unsteadiness flushing of nose
2	Soluble barbital 20 0	60	0		Unsteadiness flushing of nose

* Stimulating dose apomorphine 0 05 mg per kilogram subcutaneously

† Soluble barbital paraldehyde and atropine were given intravenously animals were fed the usual daily ration from four to five hours previous to experiment

In table 2, the experiments with soluble barbital, paraldehyde and atropine in various combinations are summarized In the first experiment, two cortical depressants (paraldehyde and soluble barbital) were combined with a peripheral acting drug (atropine) The results show a complete inhibition of vomiting

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[9] Lehman E P and Gibson H V Observations in a Case of Jejunal Fistula J A M A 82 1918 (June 14) 1924

[10] Albertoni Peter Untersuchungen uber die Wirkung einiger Arzneimittel auf die Erregbarkeit des Grosshirns nebst Beitragen zur Therapie der Epilepsie Arch f exper Path u Pharmakol 15 248 1882

[11] Tatum A L and Collins K H Acute Cocaine Poisoning and Its Treatment in the Monkey Arch Int Med 38 405 (Sept 15) 1926

[12] Hatcher R A and Weiss Soma The Seat of the Emetic Action of the Digitalis Bodies Arch Int Med 29 690 (May) 1922

The other experiments were planned to determine which was the effective agent It is evident that this is soluble barbital It should be noted that, following the administration of soluble barbital, the dogs developed a definite staggering gait If this dose of 20 mg per kilogram was given to a man of 132 pounds (60 Kg), it would amount to 1 2 Gm (18 grains) This is not a small dose for man

CLINICAL EXPERIENCE

Paraldehyde—Although paraldehyde did not show experimentally striking inhibitory effects on vomiting, it was used in three cases of nausea, arising presumably from widely different sources (nausea of pregnancy, nausea associated with a thyrotoxicosis and nausea in a patient with myocarditis with low blood pressure and mental confusion) The drug was given as a retention enema in the form of an emulsion (4 cc of paraldehyde to 30 cc of the emulsion) When the emulsion was given, it was further diluted with either starch solution or water In none of the cases was there rectal irritation In each of the cases the nausea was made distinctly worse and was associated with actual vomiting some hours later

Barbital—Soluble barbital, although a valuable drug as shown by the experimental results, was not studied very extensively, because of its pharmacologic action The toxic dose is extremely variable [13] It is eliminated in the urine quite slowly as barbital,[14] so that with any impairment of kidney function an apparently safe dose may be converted into a toxic one Finally, there is a certain habituation to the drug, which should not be neglected The literature [15] shows that the barbital derivatives have proved valuable in the relief of nausea and vomiting associated with pregnancy, as well as nausea from other causes In the few instances in which the drug was used, it seemed to be valuable in controlling the nausea, but the patients developed dizziness, one of the symptoms we were wishing to combat It will be noted in table 2 that the dogs when standing showed definite unsteadiness and flushing about the nose, after the administration of soluble barbital alone or in combination with paraldehyde and atropine If one is allowed to interpret this unsteadiness in terms of human experience, then the dogs also seem to have been dizzy The very marked effect of phenobarbital in lowering blood pressure, slowing the heart and dilating the peripheral arterioles has been reported by Gruber and his associates [16] It is therefore evident that this drug is not entirely suitable for our purpose

Bromide Ion—This ion experimentally and pharmacologically seems to be an ideal drug for use in the cases under consideration Therapeutic experience [17] has established it as the most dependable and least toxic of drugs used in the treatment of nausea Consequently, its use was extended to the treatment of the related circulatory sensations A number of patients were given doses of from 1 to 2 Gm by mouth with indifferent results When the dose was raised to 3 or 4 Gm , the symptoms could frequently be controlled However, doses of this size are best given by rectum, which limits their usefulness in ambulatory patients

Phosphate Bromide Powders—A powder was then devised which contained 1 Gm of disodium phosphate 1 Gm of sodium bicarbonate, and 1 Gm of sodium bromide This powder, when dissolved in 100 cc of water and given on an empty stomach, modified the sensations in a surprisingly short time It will be recognized that the bromide ion would dissociate the pathologic reflexes and the disodium phosphate would then reestablish the normal peristaltic rhythm If the nausea was pronounced, the patient was asked to take only half a powder at the first dose If necessary, a second and third dose could be repeated at forty-five minute intervals In general, an increase above 1 Gm of the disodium phosphate tended to make patients more nauseated and to cause emesis When the 'related sensations" were being treated, the phosphate was sometimes reduced to 0 7 Gm and the bromide increased to 1 5 or 2 Gm In practice, the sodium bromide was usually replaced by the "Triple Bromides" (a compound consisting of sodium, potassium and ammonium bromide in equal parts) because this preparation does not deliquesce so readily

This powder has been in use for approximately four years and has given uniformly excellent symptomatic relief in a wide variety of conditions In the milder cases of nausea of pregnancy, the powder is given forty-five minutes before each meal In some cases of migraine, it has been possible to give one, two or three doses at forty-five minute intervals, lessening the headache and warding off the emetic phase It has proved of great value in controlling the dizziness and pressure headaches in cases of nonulcerative colitis (irritable bowel) of undetermined etiology, and in colitis secondary to low grade pyelitis It has been used a few times in acute exacerbations of blood pressure when the patient was disturbed by the dizziness and mental numbness attendant on the condition These concrete illustrations will serve to show the usefulness of this powder which was derived from a study of the mechanism involved

CONCLUSIONS

1 In treating nausea and the related circulatory sensations (dizziness, lightness of head, pressure in the head and neck, mental numbness, frank headache), duodenal dysfunction (antiperistalsis) must be reduced quantitatively or changed into peristalsis

2 To accomplish this, the reflexes involved must first be disorganized or separated from their central connections Then a mild cathartic will reestablish peristalsis

3 Either the bromide ion or soluble barbital is effective in inhibiting these reflexes After the administration of soluble barbital, the dogs showed unsteadiness of gait and flushing about the nose

4 Clinically, the bromide ion is a more valuable drug than soluble barbital, because of its low toxicity and the absence of undesirable circulatory action

5 A powder consisting of 1 Gm each of sodium bromide, sodium bicarbonate and disodium phosphate meets the pharmacologic requirements for the treatment of the sensations under discussion In practice, this powder has proved quite valuable

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[14] Fischer, P and Hoppe J Munchen med Wchnschr **56** 1429 (July) 1909

[15] Roland F M Hyperemesis Gravidarum Brit M J **2** 1490 (Nov 24) 1906, Veronal Merck s Reports 1906 1907 1908 1909 Barrett N Sea Sickness Brit M J 1907 number 2448 p 1593

[16] Gruber C M and Baskett R F Effect of Phenobarbital and Sodium Phenobarbital upon Blood Pressure and Respiration J Pharmacol & Exper Therap **25** 219 (April) 1925 Gruber C M Shackelford H H and Ecklund A M Effect of Phenobarbital on Blood Pressure in Arterial Hypertension Arch Int Med **36** 366 (Sept) 1925 Gruber, C M and Baskett R F The Points of Action of Sodium Phenobarbital and Phenobarbital in Lowering Blood Pressure J Lab & Clin Med **10** 630 (May) 1925

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HEREDITARY DYSTROPHY OF THE HAIR AND NAILS*

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A survey of the literature on rare anomalies of the skin and its appendages makes it evident that one of the rarest is congenital alopecia. Congenital dystrophies of the nails of the hands and feet are likewise very unusual. The association of these two defects as a hereditary condition has been reported in only four families. In this paper I record a fifth family group showing this condition. Two members of this family have been examined.

REPORT OF CASES

Case 1.—B. B., a white girl aged 7, seen in the outpatient department of the Children's Hospital of Buffalo, Dec. 31, 1926, was an only child. She had been delivered by cesarean section. She developed normally, and had measles, chickenpox, pneumonia and diphtheria, all with good recovery. The child was born without hair, but since birth there had been a sparse but steadily increasing growth of hair on the head.

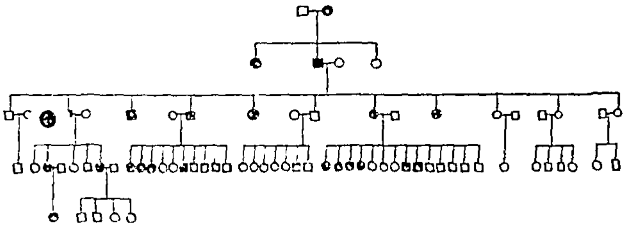

Fig. 1.—Pedigree of family here reported. The explanation of the symbol is given below.

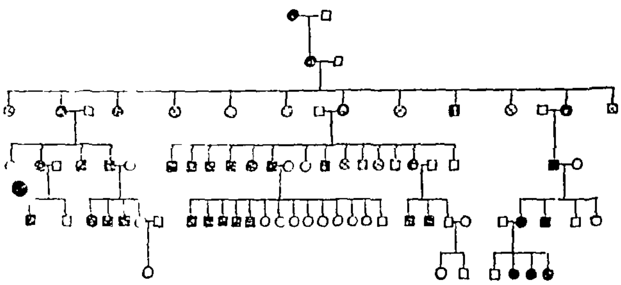

Fig. 2.—Pedigree of family reported by Nicolle and Halipré.

The patient was fairly well developed and well nourished, and was active and alert. She answered questions intelligently. The eyes appeared normal, the pupils reacted to light and in accommodation. There was a marked degree of myopia. The ears and nose were normal. There was a considerable amount of dental caries but the teeth were normal in shape and arrangement. The tonsils were small. Except for palpable nodes at the angles of the jaw there was no lymph node enlargement. The thyroid gland could not be palpated. The lungs were clear on percussion and auscultation. The heart was not enlarged and no murmurs were heard. The abdomen and genitalia were normal. Neurologic examination did not reveal abnormalities. The skin was dry and rough and felt indurated and there was a tendency to scaliness.

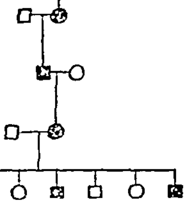

Fig. 3.—Pedigree of family reported by Eisenstaedt.

The nails of the fingers were brittle and atrophic. The lateral curvature was exaggerated and the longitudinal ridges were unusually well marked. The nails did not extend to the tips of the fingers, but became raised from the nail bed and broken off about one-fourth inch from the ends of the fingers. They were brownish or black. The nails of the toes were similar in appearance except that there was a marked tendency to a horny hypertrophy, especially of the great toe nails. At the base the nails were relatively normal but at the free extremity they were raised by a horny thickening which caused them to project upward at an angle from the nail-bed. There was no paronychia or infection of the nail-beds.

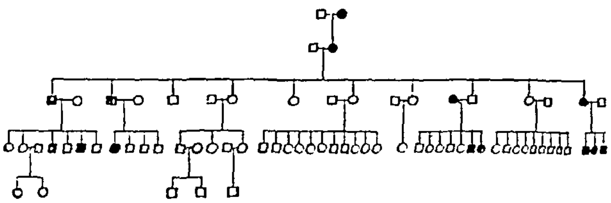

Fig. 4.—Pedigree of family reported by Barrett.

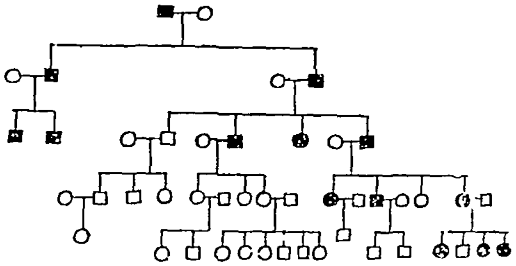

Fig. 5.—Pedigree of family reported by Jeanselme and Rimé.

The hair was very fine in texture and quite dry and brittle. It was sparsely distributed on the scalp, being almost absent in patches over the parietal regions. Its maximum length was 3 inches. The eyebrows were entirely lacking and the eyelashes consisted of only a few irregular short hairs. There was no hair whatever on the rest of the body. The blood Wassermann test was negative. The basal metabolism was plus 23 per cent.

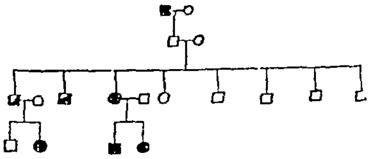

Fig. 6.—Pedigree of family reported by White.

Case 2.—The mother of patient 1, aged 41, was small, well developed and well nourished. Her mentality was perhaps subnormal. The eyes were markedly myopic. The ears, nose and throat were normal. There were only six teeth remaining, all carious, three of these were upper incisors abnormally widely spaced (no teeth had been extracted between them). The thyroid was not enlarged.

There was no general glandular enlargement. The heart, lungs and abdomen were normal. The skin was of normal texture and appearance. The nails of the fingers and toes were similar to those of patient 1, and there were several areas of infection about them secondary to trauma. The hair was very scanty over the scalp, was fine and downy in texture, and was a light blond. The maximum length wa

SYMBOLS

☐ Normal male
○ Normal female
■ Affected male
● Affected female
☒⊗ No data
◩◐ Dystrophy of nails, hair normal

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* From the Children's Hospital.

1½ inches The eyebrows and eyelashes were absent, and the remainder of the body was hairless

ASSOCIATED ANOMALIES

In the reported cases of dystrophy of the hair or of the nails in both the hereditary type and in those which occurred as isolated instances, one finds mention of various associated anomalies The teeth often show defective development[1] They may be peculiarly shaped or oddly arranged, as in a double row, or simply prone to decay very early, they may be few[2] or even entirely absent, or present at birth[3] Of the present cases the child showed marked dental caries, and the mother's teeth, which were widely spaced, were so carious that it was necessary to extract them The child's maternal aunt lost all her teeth at the age of 11 years, and careful inquiry reveals that all affected members of the family had "bad" teeth

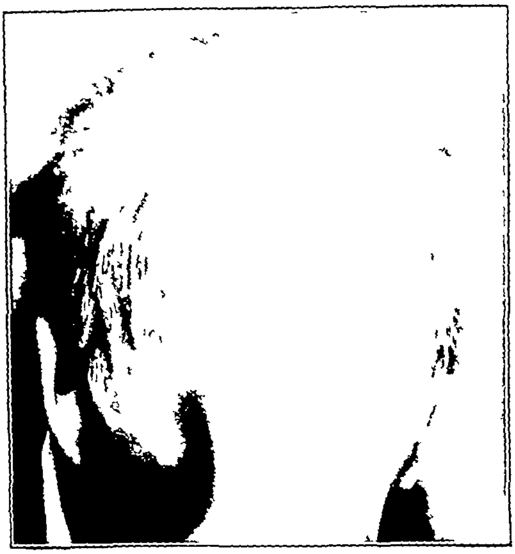

Fig 7 (case 1) —Appearance of head

Defective secretions are noted in some cases, such as absence of sweat[4] and tears, and inability to smell and taste[2] In our family none of these defects are known to have existed

Occasional anomalies of the eyes, such as cataract,[5] opaque patches in the retina, hyperopia[6] and strabismus,[7] are reported In the present cases there is no history of these but both mother and child were myopic

Stammering and other speech defects have been noted[8] in some of the reported cases In this family, the mother informs me, many members have had more or less speech difficulty She herself stammers when she becomes excited, and the daughter stuttered badly up to the age of 6 years

Left-handedness, as in Tompkinson's family, and syndactylism, as in Hyde's cases, have not occurred so far as is known in this family

Neurologic disorders, feeblemindedness and behavior abnormalities, which were so strikingly manifest throughout the large family reported by Barrett, have not been noted in our cases, nor can a history of nervous or mental disturbances in the other members of the family be elicited It may be noted that the inheritance of these disorders in Barrett's family did not run parallel to that of the alopecia and nail-changes and may have been entirely unrelated to the latter On the other hand, several affected members of Nicolle and Halipre's family were mentally defective

In this heterogeneous list of anomalies, one characteristic is noted which is common to all, namely, that the structures involved, hair, nails, teeth, skin the organs of special sense, and the central nervous system are all derived from the embryologic ectoderm Thus the condition may be considered a congenital ectodermal defect

HEREDITY

The condition of alopecia with alterations in the nails in this family is hereditary, as may be seen in the accompanying pedigree (fig 1) Of the sixty-four members in five generations, twenty-two were affected Of these twenty-two individuals, all had the typical dystrophy of the nails Eighteen are said to have been entirely hairless or to have had only a small amount of short, downy hair, as in the cases reported here, four persons had a certain amount of normal hair in patches on the scalp The unaffected persons are said to have been entirely normal Both males and females may have the condition and both are capable of transmitting it, but in no case has a person, himself unaffected, transmitted it to his children All persons that have the defect when crossed with normals give a mixed progeny[9] Thus the character behaves as a mendelian dominant unsex-linked

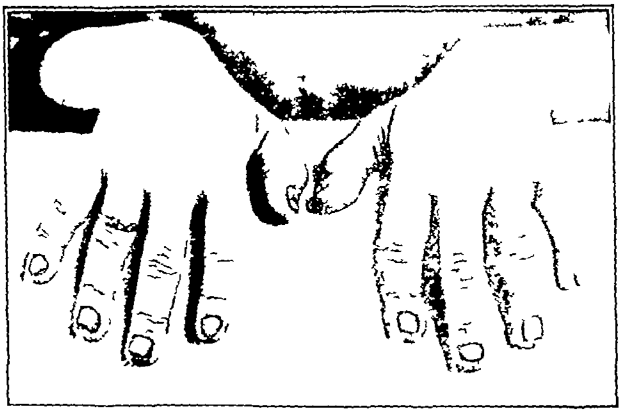

Fig 8 (case 1) —Appearance of fingernails

This type of heredity is seen in Nicolle and Halipre's family through six generations (fig 2), in Eisenstaedt's[10] family through five generations (fig 3), in Barrett's[6] family through five generations

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[4] Hutchinson Hutchinson s Archives **10** 1899

[5] Papastratigakis C Un nouveau syndrome dystrophique juvenile alopecie totale associee a la cataracte et a des alterations ongueales Paris med **45** 475 1922

[6] Barrett A M Hereditary Occurrence of Hypothyroidism with Dystrophies of the Nails and Hair Arch Neurol & Psychiat **2** 628 (Dec) 1919

[7] Tompkinson (footnote 1) Nicolle G and Halipre A Maladie familiale characterisee par des alterations des cheveux et des ongles Ann de dermat et syph **6** 675 and 804 1895

[8] Barrett (footnote 6) Harford C F Alopecia Areata and Strabismus Familial Groups Brit M J **2** 643 1924

[9] Apparent exceptions to this statement may be noted in figures 1 and 5 in which in the fifth generation all of the children of three affected persons are seen to have been unaffected The number of their progeny however one two and four respectively is not large enough to admit the assumption that the affected persons would not transmit the condition if they had more children

[10] Eisenstaedt J S Three Cases of Familial Dystrophies of Hair and Nails J A M A **60** 27 (Jan 4) 1913

(fig 4), and in the family with hereditary alopecia and fragile nails reported by Jeanselme and Rime[11] through five generations (fig 5) In a family with hereditary dystrophy of the nails but without alopecia in four generations reported by Tobias,[12] in a similar family reported by Pires de Lima[13] through two generations, and in a family with congenital baldness in three generations reported by Bazant and Gawalowski[14] the same rule obtains The only exception occurs in White's[15] family (fig 6), in which the defect was transmitted on one occasion by a man who himself was said to have been unaffected As that author was unable to verify this fact by personal observation, and because it is the sole instance of the transmission of the character by an unaffected person, its authenticity may be questioned Males and females are equally affected, the pedigrees of the families noted showing fifty-nine males and fifty-eight females with the defect

A study of the pedigrees of the four families in which complete data are available makes it evident that among the children of affected parents the percentage of persons inheriting the condition is less with each succeeding generation In other words, the condition tends to die out This is true not only in regard to incidence but apparently also as regards severity My patient (case 2), who has apparently a remarkably accurate knowledge of her family connections and who has furnished the data for the pedigree, informs me that it is common knowledge in her family that in earlier generations the affected persons had total alopecia with extreme malformations of the nails, whereas members alive at present have some hair, if only in the form of eyelashes or a lanugo-like growth on the scalp, and the nails are less severely involved

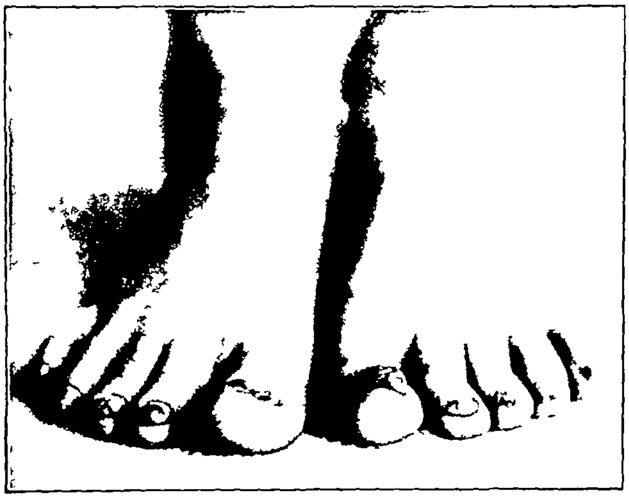

Fig 9 (case 1) —Appearance of toenails

It is a point of interest that the original report of this condition came from France[16] and that of the remaining four families (if that of Jeanselme and Rime with alopecia but only slight nail changes is included) one is French[11] and two are of French-Canadian extraction[17] The family reported here is of Franco German origin

ETIOLOGY

The etiology of these trophic disturbances of the nails and hair is highly uncertain Careful study of the structures involved, both in my own and in the other reported cases, has excluded the presence of various mycotic organisms which are so commonly encountered in infections of the scalp and nails There is no indication that syphilis plays a part Certain physical changes noted in these patients are seen also in persons suffering from various endocrine deficiencies, notably hypothyroidism, and by some observers a causal relationship has been thought to exist The possibility that a dysfunction of the thyroid gland may be responsible is suggested by Barrett Two of his patients showed signs of hypothyroidism and improved under thyroid therapy Hoffman[18] records eight persons in four generations with scant eyebrows and brittle nails, two of whom had large strumas Nicolle and Halipre could not palpate a thyroid gland in their patient and conclude that it was either absent or much atrophied The well recognized changes in the nails and hair in cretins and

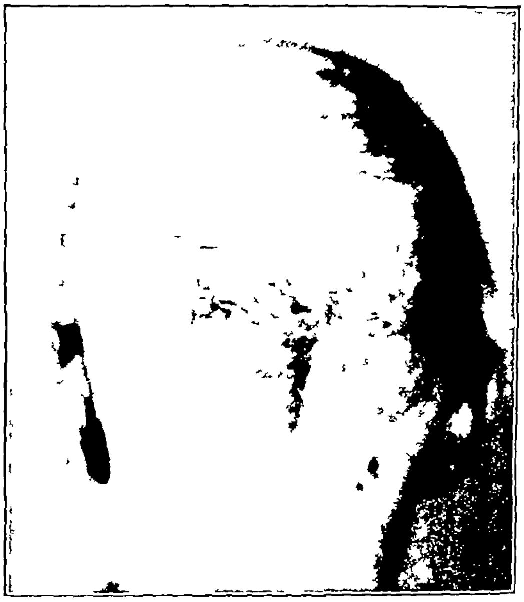

Fig 10 (case 2) —Appearance of head.

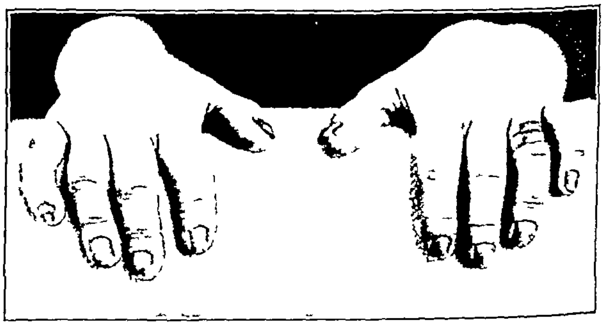

Fig 11 (case 2) —Appearance of fingernails in children with myxedema, present in more than 75 per cent of these cases, and a certain amount of evidence that hypothyroidism may be directly inherited[19] add weight to the hypothesis that the thyroid gland may be at fault Unfortunately, in none of the reported cases of hereditary alopecia with dystrophic nails is the basal metabolism recorded In case 1, the basal metabolism was higher than normal, a fact that would seem to contraindicate treatment with thyroid extract In view of the lack of satisfactory standards for children, however, and the consequent unreliability of basal metabolism tests on them, it might be advisable to give thyroid therapy a trial

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[11] Jeanselme and Rime Un cas d alopecie congenitale familiale Bull Soc franç de dermat et syph **31** 79 82 1924

[12] Tobias Norman Hereditary Familial Dystrophy of Nails J A M A **84** 1568 (May 23) 1925

[13] Pires de Lima J A Onychatrophie familiale congenital Ann de dermat et syph **6** 266 271 1924

[14] Bazant and Gawalowski Hypotrichosis Universalis Congenita Ceska Dermatologie **1** number 7 1920

[15] White C J Dystrophia Unguium et Pilorum Hereditaria J Cutan & Gen Urin Dis **14** 220 (June) 1896

[16] Nicolle and Halipre (footnote 7)

[17] Eisenstaedt (footnote 10) White (footnote 15)

[18] Hoffman F Ueber Verkummerung der Augenbrauen und der Nagel bei Thyroidosen Arch Dermat u Syph **89** 381 1908

219 Bryant Street

Clinical Notes, Suggestions and New Instruments

EXTENSIVE CUT THROAT WITH COMPLETE LACERATION OF TRACHEA AND ESOPHAGUS

G D Scott MD Sullivan, Ind

While many cases are reported of extensive laceration of the important structures in the neck, such as complete severence of the larynx, trachea and larger muscles, yet after an extensive search of the literature I have not found recorded a case of complete severence of both esophagus and trachea It is for this reason that this case of complete severence of both trachea and esophagus is here reported

Cathcart[1] reported a severe cut-throat in which the structures had been divided above the level of the hyoid bone down to the vertebral column The main vessels were not cut, but one or both lingual and possibly the facial arteries had been divided Tracheotomy was performed and two days afterward the parts were drawn together with mattress sutures of silkworm gut The edges of the wound, however, became greatly inflamed and sloughed and the stitches had to be taken out A fetid abscess of the lung or a pulmonary gangrene then developed, and for some days the man was not expected to recover He coughed up through the tube quantities of extremely fetid pus The condition, however, gradually improved The wound healed slowly by granulation, and at the time of the report he breathed through the tracheotomy wound and fed himself through a small tube passed through the narrow wound opening He could speak intelligently when he obstructed the tracheotomy tube and the cut-throat opening

REPORT OF CASE

History—A man, aged 47, was admitted to Sherman Memorial Hospital at midnight, June 30, 1925, because of an injury about one hour before in an automobile wreck in which his throat was cut by glass from the windshield

When first seen he was in a sitting position on an ambulance cot with a large gaping wound in the middle third of the neck extending from the external borders of both sternocleidomastoid muscles The wound was large enough to admit the fist It extended in depth to the muscles covering the cervical vertebrae, presenting an enormous cavity

On looking into this cavity it was seen that the trachea and esophagus were both completely severed between the first and second tracheal rings The larynx was exposed and was drawn upward as well as the upper end of the esophagus The lower end of the esophagus was retracted downward slightly below the manubrium The trachea was also retracted downward to about the upper border of the manubrium Both the right and the left carotid sheaths with their contents were completely exposed The carotid arteries and jugular veins were not cut, although the left carotid sheath was cut, allowing the left carotid artery and the left internal jugular vein to bulge into the wound

The patient apparently had little difficulty in breathing while in a sitting position or leaning slightly forward, although on attempting to lean backward breathing was almost impossible on account of coughing There was some oozing hemorrhage, but it was not profuse He was very pale, yet the pulse was of a good quality, ranging from 90 to 95 a minute, and he was apparently in but little shock

Operation—The patient was operated in a sitting position, as it was impossible for him to lie down No anesthetic was used The skin surrounding the wound was cleansed with alcohol and iodine The wound, which contained numerous particles of dirt and cinders, was washed with sterile water The esophagus was first united by interrupted number 2 chromic catgut sutures The upper portion of the esophagus was apparently very thin walled The mucous membrane in the lower portion had retracted downward quite a distance below the muscular coat The muscular coat on the posterior wall was first approximated by interrupted chromic cutgut The mucous membrane of the posterior wall was next approximated with interrupted chromic catgut, the knots being tied on the inside of the lumen The mucous membrane on the anterior wall was next approximated, the knots being tied external to the lumen, after which the muscular coats on the anterior wall were approximated in like manner The deep fascia and the constrictor muscles of the esophagus were next approximated by interrupted chromic catgut The trachea was next approximated and sutured, beginning on the posterior wall, the suturing being done with interrupted chromic catgut, the knots being tied outside the lumen Approximation was carried around the trachea to the anterior wall, but just before the last four sutures were tied anteriorly a stab wound was made about one inch below the tracheal wound and a tracheotomy tube inserted, after which approximation of the trachea was completed The carotid arteries and internal jugular veins were lying exposed from the upper portion of the thyroid cartilage to the sternum but were not cut The recurrent laryngeal nerves were undoubtedly severed but were not identified The isthmus of the thyroid gland had evidently been severed and lost

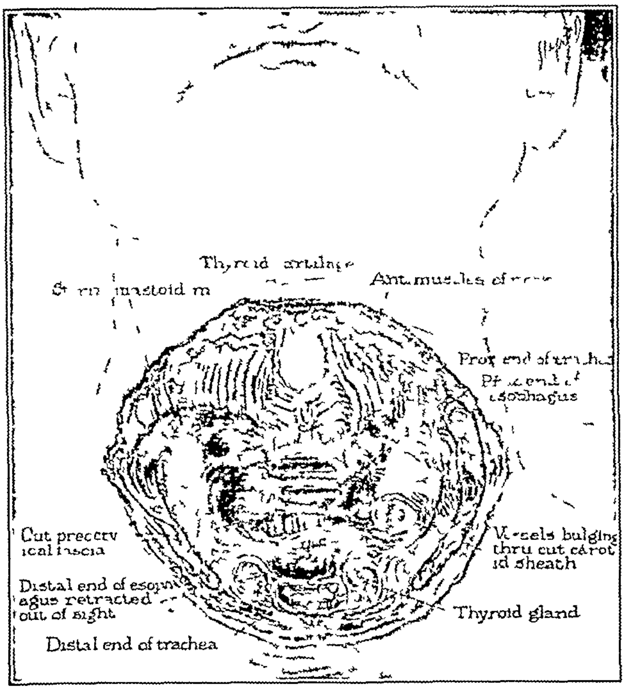

Fig 1—Extent of wound and structures divided

Two cigaret drains, one on each side of the trachea were inserted between the trachea and the carotid sheath The platysma was sutured with interrupted chromic catgut and the skin sutured with skin clips

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[19] Hun and Prudden Myxedema Am J M Sc **96**, July and August 1888 Howard C P Myxedema A Study J A M A **48** 1226 (April 13) 1325 (April 20) 1403 (April 27) 1907

[1] Cathcart C W Severe Cut Throat Tr M Chir Soc Edinburgh **29** 1901 1909 1910

During the operation there was apparently little pain except in the upper portion of the muscular layer of the esophagus, which when caught with forceps or stuck with the needle apparently caused some pain There was apparently no pain when the trachea was sutured When the tracheotomy tube was first introduced, it produced a spasm of coughing and rapid respiration Sticking the finger down the trachea also produced reflexed cough and rapid respiration The patient had evidently aspirated a large amount of blood and mucus into the trachea, which produced several attacks of coughing He stood the operation well and had but little shock Immediately on completion of the suturing the patient could whisper and asked for water It was given to him and he was able to swallow He complained that the water was too hot and was then given ice water, of which he drank about two glasses There was no leakage around the drain on swallowing No dressing was placed over the wound on account of the tracheotomy tube The duration of the operation was thirty-five minutes

Fig 2 —Appearance of patient after recovery showing almost invisible scar

Clinical Course —The patient had a fair night following the operation and slept some, but on the following morning he could not swallow so well as immediatey following the operation on account of apparent swelling and pain On account of coughing in the recumbent position he was placed in a sitting position

Next morning, July 1, gastrostomy was performed under procaine hydrochloride anesthesia This operation was performed with the patient in a semisitting position He stood the operation well, but had more pain than he had from the suturing of the neck

After the second operation the patient received nourishment through the gastrostomy tube, although he continued to drink water and broth by mouth There was some oozing of the saliva through the drain openings in the neck for a few days The drains were removed at the end of forty-eight hours There was very little infection and the wound practically healed by primary intention The patient could whisper but could not talk in a loud voice He had the *ordinary cough after any tracheotomy Six days after the* operation the patient removed the tracheotomy tube during the night The following night he also removed the gastrostomy tube He had no ill effects from either, and after removal of the gastrostomy tube he was fed entirely by mouth Both gastrostomy and tracheotomy wounds healed within a short time The patient left the hospital, July 27, twenty-seven days from the time of the accident

Follow-Up Course —Several weeks after discharge from the hospital the patient reported, complaining of difficulty in swallowing He could swallow liquids but not semisolids Esophageal bougies were introduced weekly for a period of three months, after which they were introduced every three or four weeks The last introduction was nine months from the time of the operation, at which time he could swallow meat and other solid foods After several months he began to talk aloud just a few words at a time This gradually improved until at present he can talk for a short time in the normal voice, although it seems to require an effort During November, 1925, the patient took a severe cold and it was thought he might have a mediastinal or lung abscess Roentgen-ray films did not disclose either, and he soon recovered from this cough He now has rapid respiration on slight exertion but otherwise is in fair condition

COMMENT

This case demonstrates that end-to end suture of the esophagus and trachea can be done without anesthesia, with but little pain, and with good results It also demonstrates that gastrostomy is not necessary following end-to end suture of the esophagus, as this patient continued to swallow liquids from the time of the anastomosis

Although the recurrent laryngeal nerves were not identified at the operation they were undoubtedly severed, yet the patient talks in a loud voice

The case also suggests a new method for a wide exposure of the esophagus in the neck While complete severence of the trachea for the purpose of exposure of the esophagus may not be feasible, it is not impossible

Sherman Building

BIMALLEOLAR FRACTURES

Barclay W Moffat, M D New York

Bimalleolar fractures, in my experience, are the most disabling fractures of the leg when improperly treated In children it is sometimes possible to restore the anatomic relations and to maintain the position by the use of plaster In adults, however, it is generally impossible since, though the fragments may be approximated under anesthesia, the pull of the stronger muscles will displace the foot when the patient regains consciousness In the latter type, I believe that early open operation is indicated The alternative treatment is traction applied to the foot either by the use of the Sinclair skate which is glued to the sole of the foot, or a plaster shoe, grasping the foot as does an oxford in which have been incorporated straps for the fixation of weights applied by traction

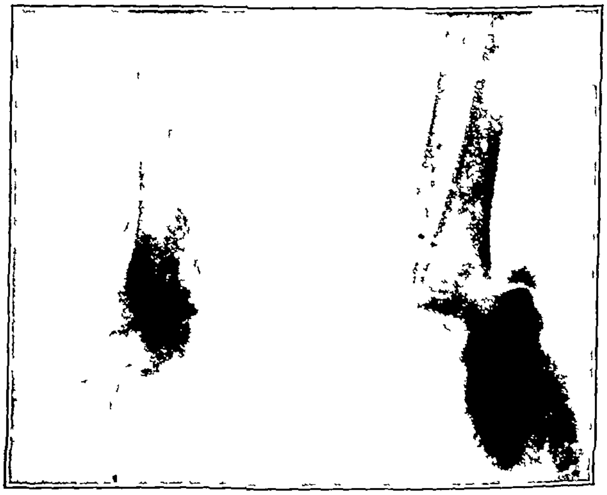


Fig 1 —Typical case of bimalleolar fracture showing severe deformity uncommon in this type of fracture

The difficulty of the latter methods is that, in all ankle fractures, marked inversion of the foot must be maintained in order to crowd the body of the astragalus against the internal malleolus and to hold the external malleolus firmly against the lateral face of this bone, otherwise there will be a widening of the mortise, allowing rotation of the astragalus on its vertical axis, resulting in a severe flatfoot It is difficult to see how by traction the foot may be inverted and crowded to the inner side of the leg without displacing the inner malleolus and thus dislocating the foot inward

The operation which I have found most serviceable in the treatment of this condition is fixation of the internal malleolus by the use of the Gallie beef bone screw The operation is simple and, unlike the use of plates or metal screws, does not involve the introduction of a foreign body which may cause absorption of the bone along its tract The technic of the operation is simple An incision anterior to the inner malleolus is carried through to the bone The fragment of the internal malleolus is replaced on the tibia A hole the diameter of the screw is drilled through the length of the malleolus slightly obliquely, so as to secure a good hold in the tibia This drill hole is then tapped with the instrument provided in the bone screw outfit, and the screw twisted in drawing the malleolus tightly into place and providing a firm abutment against which the astragalus may be placed without danger of inward displacement of the foot As a rule it is not necessary to fix the external malleolus, inversion of the foot being sufficient to draw it in line and to maintain it in this position

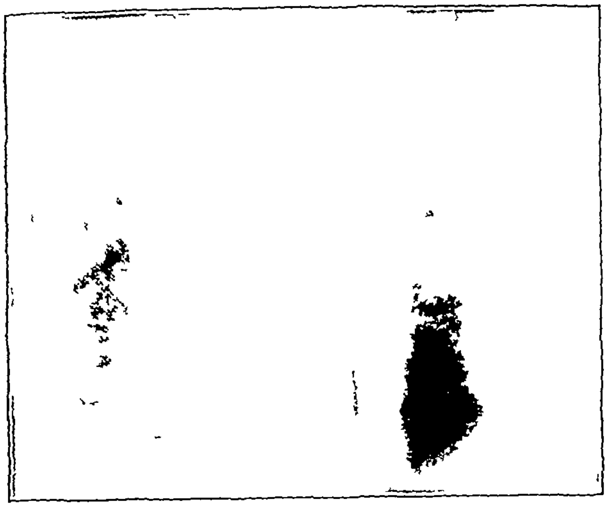


Fig 2 —Appearance of same fracture after operation showing restoration of mortise and inversion of the foot

The difficult cases are those in which reduction by manipulation has been attempted and no attempt made to fix the fragment In these cases there is severe atrophy of the bones, which are cancellous in structure The cortex becomes so soft under these circumstances that it is impossible to maintain the fragments by the use of the screw and it becomes necessary to chisel off the malleoli and secure approximation by suturing with a sharp needle and chromic catgut When the malleoli have become united in their normal position and before the union has become solid, the mortise may be molded into proper conformation The patient should be encouraged to walk in his plaster with the foot in inversion, when a solid union may be obtained with the anatomic relations approximately correct

The difficulty and duration of treatment in neglected cases are sufficient argument in favor of early open operation in those cases *in which approximation of the fragments cannot* be maintained by immobilization in plaster

CONCLUSIONS

1 Roentgenograms should be taken immediately after an attempt to reduce bimalleolar fractures by manipulation, and if a relapse has occurred open operation should be done regardless of the amount of swelling of the soft parts

2 The neglected cases offer a poor prognosis and open operation is the only treatment possible

3 The operation of choice is the use of the Gallie beef bone screw

163 East Thirty-Sixth Street

SPONTANEOUS RUPTURED UTERUS

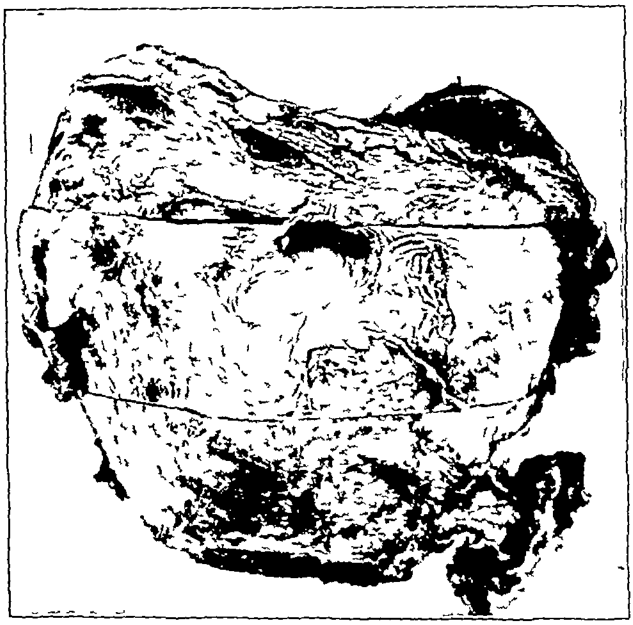
J Ogle Warfield Jr, M D Washington D C

This case is a particularly interesting one and although I attended the patient only during her last illness, I have briefly summarized her former obstetric experiences because of their rarity

REPORT OF CASE

A white woman at the age of 23 was delivered of her first pregnancy, in April, 1918, by cesarean section, because of eclampsia The child was normal but died six months later of pneumonia complicating pertussis Further details in regard to this pregnancy and operation were unfortunately not obtainable

In September, 1921, she came to the dispensary and was found to be from three and a half to four months pregnant The pelvic measurements were within the normal limitations and she had no particular complaints Subsequent visits twice a month showed that she suffered with dyspnea, orthopnea and edema of the ankles due to cardiac fibrillation which condition was improved by rest, restricted diet and a course of digitalis She had no acute abdominal pain during pregnancy December 25, she was admitted to the hospital She had had irregular abdominal pains simulating labor pains for twelve hours and some bloody vaginal discharge The fetus was *determined to be of normal size in the left* occipito-anterior position with its head floating and its heart distinctly heard in the left lower quadrant By rectal examination the cervix was closed and no fetal part presented in the pelvis During the afternoon the intermittent pains became continuous and general over the abdomen The mother's pulse became irregular and with less volume She became pale, and the abdomen was generally very tender without rigidity The slight vaginal bleeding persisted The fetal heart was not audible It was thought that she had a prematurely separated placenta with concealed hemorrhage and that the absence of abdominal rigidity was due to the vaginal bleeding An immediate laparotomy revealed a full term *abdominal pregnancy* The peritoneal cavity contained some old blood and a normally developed female child of 8 pounds (3 6 Kg), which had been dead several hours The child and its sac were removed The placenta was of normal size and inserted on the posterior uterine surface, the posterior layers of the broad ligaments mostly on the right side, and about one third of it on the anterior parietal peritoneum, so that it was divided when the abdomen was opened The placenta was not removed and drains were inserted A transfusion was given Convales-


Uterus showing the crater like rupture in the fundus

cence was stormy as the result of loss of blood, shock, nausea and abdominal distention As the umbilical cord and placenta sloughed away, they were removed by means of a proctoscope inserted through the drainage tract A mild left femoral phlebitis also developed After a stay of seven weeks she left the hospital with the incision entirely healed

In January, 1923, the patient was again admitted to the hospital for three days complaining of sterility At this time a Rubin's test and curettage was done A cervical stenosis was thoroughly dilated and the tubes were patent within normal limits of gas pressure

The patient returned to the dispensary in December, 1924 She was normally two months pregnant with no unusual or alarming symptoms She was closely watched during the pregnancy, which progressed normally and without cardiac disturbance At the end of the eighth month she was suddenly awakened one morning at about 5 o'clock with a violent, sharp epigastric pain A near-by physician administered morphine and advised that she go to the hospital She did not enter the hospital, however, until 9 o'clock During the interval the pain continued to be very severe, with nausea and vomiting, the abdomen became generally sore and tender, and the patient complained of shortness of breath, weakness, thirst, faintness and free perspiration I was called to see the patient immediately on admission to the hospital She was rather drowsy and nauseated, she was very pale, respirations were quite rapid, shallow and entirely costal, the skin was cold and clammy the pulse was very rapid with low tension and volume and the systolic blood pressure was 90 The abdomen was distended, particularly in the upper half with absence of respiratory movements and generalized rigidity and tenderness especially in the median line just above the umbilicus A large abdominal mass apparently the uterus, was definitely palpated The fetal outlines could not be determined, but the fetal heart was just above the umbilicus Rectal examination revealed nothing important Spontaneous rupture of the uterus was diagnosed All methods of stimulation were employed and transfusion necessitated venesection The veins of the arm were collapsed and very difficult to find Immediate laparotomy showed the peritoneal cavity full of blood with clots A premature dead 6 pound (2 7 Kg) male child of normal appearance was lying free in the upper peritoneal cavity The placenta and membranes were protruding half way through a large ragged, ruptured opening in the uterine fundus and had prevented the uterus from contracting The child and placenta were quickly removed and a hysterectomy was done The patient's condition improved slightly after transfusion but she died about half an hour after operation

The pathologic examination showed a hardened uterus measuring 12 by 11 by 8 cm, which had been amputated through the very uppermost portion of the cervix, and a normal left tube and ovary The uterine fundus presented a crater-like area of rupture 8 cm in diameter at its external border, with irregular everted margins Anteriorly it terminated at the upper end of a midline scar which extended 3 cm downward on the anterior uterine surface terminating 6 cm above the line of amputation The scar was irregular, with several transverse elevations separated by corresponding depressions, the deepest of which lay 5 mm below the general surface On uterine section, the walls were thick and the uterine cavity well contracted with the placental site posterior The free surfaces were covered by decidual tissue with adherent villi The latter extended far down into the muscularis and in great part lay in the lumen of partially obliterated vessels There was an unusual invasion of the muscle by fetal elements and unusual obliteration of vessels Except for vacuolization of the protoplasm, the muscle fibers appeared normal In many of the smaller veins there was an excessive number of leukocytes and in places strands of leukocytes extended along the course of small lymphatics

CONCLUSION

It is needless for me to outline in detail the treatment for abdominal pregnancy and ruptured uterus Early operation is essential, and various methods of stimulation should be used as indicated In the former condition, the placenta must not be removed from its attachment at operation for fear of hemorrhage, and in the latter a hysterectomy is necessary to control hemorrhage In cesarean operation the place of election for the uterine incision is the median line of the anterior uterine wall The fundus is a weak place because of its thinning out and extensibility during pregnancy

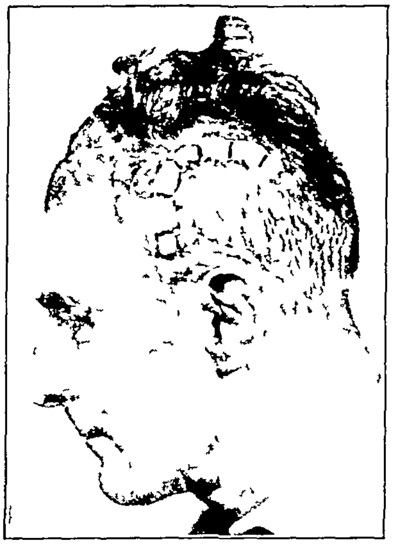
In this case, though it cannot be proved, it seems likely that the healing of the previous cesarean section incision in the upper and fundal part of the uterus was faulty, in that it led to the inclusion of endometrial tissue in the muscular wall so that when the organ became distended by the new pregnancy, the tissue invaded by the fetal cells and villi yielded and gave rise to the rupture

1744 N Street N W

MODE OF CLOSURE AND DRESSING OF WOUNDS, ESPECIALLY THOSE OF THE HEAD *

Walter Rogers Brewster, M D , New Orleans

In the practice of surgery, the successful bandaging and dressing of head wounds has always seemed to me a difficult feat Patients with large wounds, requiring large dressings, usually need hospitalization, and every one knows the difficulty of keeping a head dressing on a restless or uncontrollable patient Small operative and accidental wounds about the head are covered generally with a collodion dressing (which is difficult and painful of removal), or the entire head is swathed in bandages, much to the discomfort and dismay of the patient desirous of going about his usual duties



Appearance of patient clip retouched for contras

In the handling of quite a number of patients suffering with head wounds, the dressing presented in the accompanying illustration has been evolved, and, with it, the mode of closure, thus making the closure and dressing all part of the same technic

Since it was first used it has been tried many times and has proved most satisfactory, being easy of application, permanent when once placed, not excessively decorative in its scheme, and easily removable

An account of the patient here illustrated will suffice to describe the dressing and its application

M S, a man, was struck on the head, Oct *20, 1926,* by a steel plate The wound extended through the periosteum, exposing the bone and freeing the insertion of the temporal muscle In closing the periosteum was sutured and the insertion of the muscle replaced with absorbable material, several silkworm sutures being used to approximate the wound edges, which were then brought together accurately with large Michel clips

Under the arch formed when these clips are bent in place, an open sponge is passed by means of a probe It is then spread between the clips to cover the wound, the ends cut smooth, and the dressing is complete Moreover, it will not move unless the clips are pulled out of place, and this procedure is painful and difficult enough to deter the patient from attempting it

The slight serous oozing from the wound is absorbed by the gauze and dries, and the wound is entirely sealed From the fifth to the seventh day the dressing is removed by straightening the clips in the usual way The gauze will be found to be stuck, and may be left to fall off or be soaked off by the patient The sutures, if any have been used, are removed in the customary manner

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* From the Department of Surgery Tulane University of Louisiana School of Medicine

Any infection or swelling may be easily seen and readily dealt with, since the dressing covers only the wound itself, leaving the surrounding area exposed Any part of it may be removed by cutting out the desired section of gauze and by removing the clip

Though I have employed this technic only in head wounds, there appears to be no reason why it should not be applied satisfactorily elsewhere on the body

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A NEW RETENTION CATHETER AND STILET

Wilford A H Councill M D Baltimore

For a number of years I have keenly felt the need of a retention catheter which will combine the requisite features of (1) easy and safe insertion in the most difficult cases, and (2) positive retention of the catheter without the unpleasant circumstances usually found in our present methods

There have been various types of catheters devised which serve their purpose very well in the usual run of cases, but unfortunately certain pathologic conditions at times present themselves, making the insertion very difficult and sometimes impossible Especially is this true in contracture of the vesical orifice when dealing with carcinoma, rupture of the urethra and some benign prostatic hypertrophies

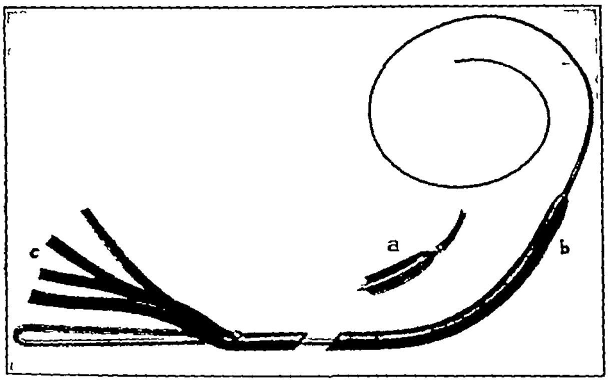

Fig 1 —Retention catheter and stilet with filiform attached *a* cross sectional view of catheter showing how olive prevents stilet from being pushed through reinforced tip with screw attachment for filiform, *b* lateral eyelets *c* retention flaps

Heretofore the greatest aid that we have had for the introduction of a catheter has been the stilet, but this has not proved to be entirely satisfactory Occasionally we come in contact with cases in which passage even with this aid is impossible, and it is with this type of case that undue force often results in the stilet being pushed through the tip or eyelet of the catheter, causing considerable trauma and possibly a false passage In seeking to obviate this accident I have devised a catheter and stilet with a filiform attachment, which when used conjunctively facilitates the introduction of the catheter and minimizes the amount of trauma

THE CATHETER

The catheter is of the soft rubber variety with a reinforced tip through which has been made a hole for the passage of a filiform (fig 1 *a*) Laterally there are three eyelets (fig 1 *b*) to insure better drainage, and at the proximal end are four flaps (fig 1 *c*) which, when made fast to the penis, as seen in figure 2, embodies a new idea for a retention catheter

THE STILET

The usual type of stilet has been used with the following change At the end is an olive to prevent the stilet from being pushed through the tip of the catheter (fig 1 *a*), and a screw three-eighths inch long for the attachment of a filiform

TECHNIC

1 Surgical cleanliness is observed

2 The catheter is threaded over the stilet until the screw protrudes through the hole in the tip

3 The urethra is ballooned with oil and the filiform is passed into the bladder

4 The screw of the stilet is attached to the filiform and the catheter is passed into the bladder

5 The stilet is withdrawn through the catheter with the filiform intact

6 The flaps are turned back over the penis and attached with three strips of adhesive tape (fig 2)

To keep the operative field dry, it has been my custom to use a conical plug (fig 2 *c*) in the end of the catheter, and in cases in which permanent drainage is desired, to insert a cannula (fig 2 *b*) with a rubber tube attachment (fig 2 *d*)

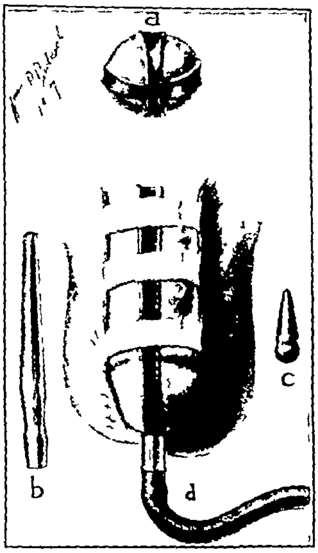

Fig 2 —Method of retaining catheter *a* end of glans penis with flaps turned back *b* cannula *c* cannula inserted into catheter with rubber tube for drainage

RESULTS

I have used the instrument in all types of obstruction save for stricture, and have found not only that the catheter is easily and safely inserted but that by the flap method retention is certain and inconvenience to the patient is greatly reduced

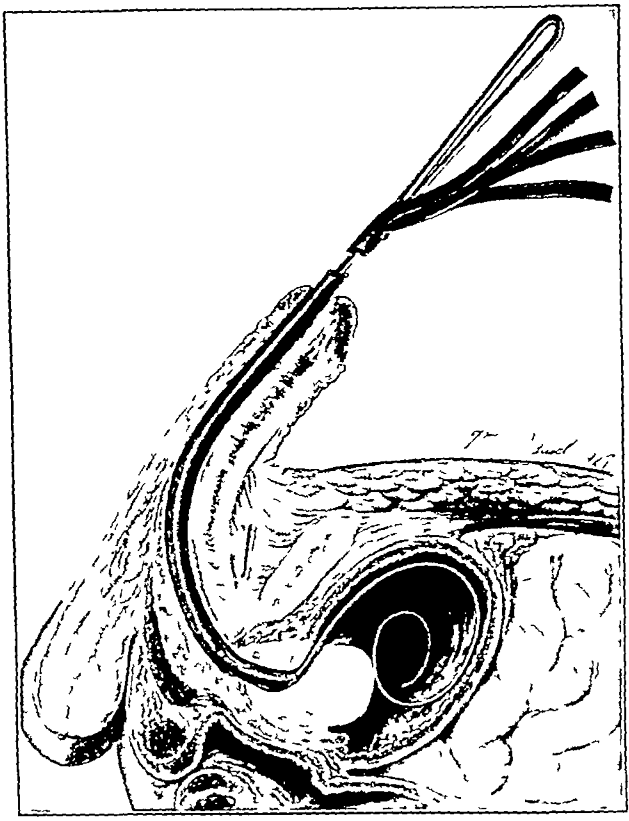

Fig 3 —Sagittal section showing how filiform guides catheter over large prostatic obstruction

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SATURDAY, MARCH 3, 1928

THE SCIENCE OF MEDICINE AND THE MEDICAL SCIENCES

The striking feature of modern medicine that characterizes its great change from the medicine of the past is its genuinely scientific character[1] This implies that there exists today a real science of medicine If this is true, what is its relation to the so-called medical sciences? Or are the terms interchangeable? To these inquiries Dr Rufus Cole[2] of the Rockefeller Institute for Medical Research directed his vice presidential address as chairman of the Section on Medical Sciences at the Nashville meeting of the American Association for Advancement of Science He pointed out that, so long as medicine was identified strictly with healing and considered specifically equivalent to the branch of knowledge which has to do with the prevention, cure or alleviation of human disease the development of its scientific aspects was inevitably greatly inhibited, for the dogma of science is ' unrestricted investigation"—the pursuit of knowledge quite independently of any immediate results As man's early and perhaps primary interest in disease arose from the desire for relief, the latter became the foremost object of medicine As Cole explains, physicians have been employed by the sick to heal them, and the physicians therefore could not be entirely disinterested seekers after truth Under these circumstances, it would not have been remarkable if any seeking for knowledge which physicians undertook should always have been directed to a search for cure Cole also reminds us that whereas the Hippocratic Oath expresses lofty moral principles and registers a vow to transmit the knowledge of the art to certain disciples, it contains not a word about attempting to learn more about disease

Incident to the pursuit of medicine, certain types of scientific inquiry gradually arose Eventually they became better organized as human anatomy and physiology What was more natural than that the physician daily engaged with abnormalities of the most varied sort should become curious about the normal character of the structure and the functions of the body Physics and chemistry likewise were pursued by physicians, the "searchers" of the earlier centuries, but these disciplines early were divorced from the medical school and acquired a real independence Cole aptly stresses the significant circumstance that human anatomy and human physiology retained their incorporation in the medical school, and to this day they have never gained their independence They are still called medical sciences and have had to bear the burden imposed on them, by implication at least, of pursuing knowledge for a definite utilitarian purpose Whatever the situation may be today, in the past this burden has too often been more than merely that imposed by implication, it has been a real impediment, sufficient actually to hamper the growth of these sciences Today anatomy and physiology are thriving best where they are most free from the restrictions enforced on them through their inclusion in the medical school These restrictions are not all associated with the relation of medicine to cure, however Certain restrictions in the medical school, Cole concludes, have arisen from the attempt to provide a too rigid and all inclusive curriculum which expresses the antithesis of the university spirit

The fundamental sciences, whether pursued in the halls of a medical school or in some other scholastic environment, should no longer be designated and developed as "medical sciences" They do not serve medicine alone As Cole says, the only medical science is the science of medicine itself, that is, the science whose field is the study of disease Even pathology, he avers, is not one of the medical sciences or a contributory science to medicine It is a part of medicine itself unless medicine is to be restricted to the cure of disease The science of medicine is no more applied pathology than pathologic anatomy itself is applied anatomy and histology The study of pathologic anatomy is, or should be, only one of the methods for investigating disease, and the closer it can be interwoven with the other methods, the more likely are its results to be of value The field of pathologic anatomy is the study of the effects of disease To learn about disease actually, that is, to understand the alterations in function and structure which are exhibited by the abnormal individual, the individual himself must be studied, during life as well as after death, and this study must be combined with an attempt to explain the abnormal phenomena in the light of present knowledge and by the aid of all suitable methods This, Cole concludes, is the science of medicine, if such there is, and if there is not such a science there ought to be

The scientific method is not the only mode of approach to the problems of medicine Empiricism, the accumulated experience of the past, also has made its helpful contributions The modern physician as a rule prefers to put past experience to the test of modern experiment He has little patience with a new idea that has no experimental evidence in its favor Hence the dictum that the best approach to knowledge is through the gateway of science

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[1] Lee F S Scientific Features of Modern Medicine New York Columbia University Press 1911

[2] Cole Rufus The Interrelation of the Medical Sciences Science 67 47 (Jan 20) 1928

GLYCOGEN IN MUSCLE

Only a few years ago the glycogen distributed in various parts of the body, but conspicuously in the liver and the skeletal muscles, was assumed to play the same part Bayliss[1] has stated that, by storage in tissues, glycogen, an insoluble substance, is kept out of the risk of undesirable participation in chemical reactions The glycogen of animal tissues is usually represented as a reserve substance analogous to the reserve carbohydrates stored as starch in different parts of plants It is further assumed that when the blood is loaded with carbohydrates a considerable proportion is laid down as the inert polysaccharide glycogen As soon as the supply of sugar to the blood is withdrawn, the tissues continue to use the sugar of the blood, which is made up at the expense of the glycogen in the liver and elsewhere Thus the food plays the conspicuous part in determining the quantity of glycogen in reserve In starvation it is known to disappear rapidly from the liver, and has been supposed to vanish from the muscles likewise, though at a later period

Recent investigations have begun to modify these views as to the behavior of glycogen in the body In particular they have given the glycogen of the muscle an entirely different significance from that of the liver According to the new interpretations the glycogen of the liver is to be considered partly as an intermediary substance in the new formation of dextrose out of protein and fat, and partly as a storage form of excess carbohydrate, whereas the glycogen of the muscles has but one function to serve as the mother substance of lactic acid formation This implies that in conditions of muscular inactivity no quantitative change should occur in the glycogen of the muscles

Cogent evidence for the peculiar function of muscle glycogen has been furnished by Choi[2] from the department of physiology at the University of Toronto He has demonstrated also that glycogen cannot readily be built up in the muscles in the absence of insulin, either derived from the pancreas or injected from without Thus the quantity of glycogen present in skeletal muscles is not affected by injection of dextrose in eviscerated animals unless insulin is introduced along with the sugar Epinephrine, which mobilizes sugar in the body, does not stimulate the disintegration of muscle glycogen or give rise to hyperglycemia in the absence of insulin Choi has shown that glycogen formation does not occur in the muscles after pancreatectomy, and also that the presence of the liver does not in itself determine whether or not glycogen formation in the muscles will occur, in his depancreatized animals the circulation through this organ was undisturbed Choi concluded, therefore, that in the breakdown process within the intact muscle glycogen is not converted into dextrose but into lactic acid, and that the only condition under which it can indirectly contribute sugar to the blood is when this lactic acid is carried to the liver and there synthesized into glycogen, from which dextrose is readily derived The glycogen of muscle apparently has an entirely different physiologic significance from that of the liver

THE GENERAL PRACTITIONER AND MENTAL EXAMINATIONS

This is the age of specialization with skilled diagnosis and treatment of localized disease In the human animal many special departments are correlated and coordinated into one whole mechanism The bedside physician of an earlier day was an able observer of the signs and symptoms of disease and of the causes of death as they affected the entire human being A special department may become disturbed and out of perfect running order because of some disturbance affecting the whole body or from an infection in some other special department An organ or specialized system in trouble may be of minor importance compared with a more general disturbance which may be the basis not only of this but of other local abnormalities Skilled treatment of an abnormality in one department may cause that organ or system to run more smoothly, but not relieve the more important and primary basic disease There is therefore continuous need for skilled practitioners of general medicine who will know the human being as a whole Even the skilled diagnostician who has never practiced at private bedsides may fail to grasp the *tout ensemble* of the patient's symptoms, work, home and surroundings, which is apparent to the physician who has had a general bedside practice If the general practitioner does his full duty he requests a report from the specialist concerning his patient if the patient is wise he will return to the family physician from time to time to ascertain whether his condition has become normal

Prominent among specialties in this age of standardization is the rating of mental capacity The general practitioner should be familiar with the technic of these examinations He should discover early a child's mental caliber and begin to treat or advise according to his observations "An intelligence test," as has been pointed out by Wile, "is only a single factor in personality" "The intelligence test does not measure emotions, courage, leadership, artistry or companionability It is simply a measure of intelligence Further, it is not an absolute measure like a yardstick or a pound weight It is a relative measure, depending to no small extent upon where one lives and during what age" This definition by Wile emphasizes the important fact that the mere determining of a child's mental age does not determine his future success or ability to "carry on" later in life A child with high intelligence may have such a disagreeable personality as to cause his life to be a failure, while a so-called moron may succeed in life and even hold positions of public trust The intelligence tests must be correlated with the personality, the surroundings and the social condition of each person

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[1] Bayliss W M Principles of General Physiology London Longmans Green & Co 1915

[2] Choi Y O The Relationship of Glycogen Formation in the Muscles to the Pancreas and to Epinephrine Am J Physiol 83 406 (Jan) 1928

Psychoanalysis, it should be recognized, when applied to mental disease, is only a branch of general medicine The psychoanalyst who has not studied general medicine before he takes up his specialty is likely to overlook physical, physiologic, nutritional or pathologic causes for the mental abnormalities in his patient The physical body has long since been partitioned into many specialties Now the aspects of mental and psychologic diagnosis and treatment are assigned to particular groups The general practitioner must not lose sight of the value that lies in any of these fields More than ever there devolves upon him the necessity of keeping abreast of progress in every phase of scientific medicine

Current Comment

GRAPEFRUIT AS A "PATENT MEDICINE"

In October, 1927, the *Journal of the Michigan State Medical Society* printed an utterly preposterous article entitled "The Therapeutic Value of Hill Grown Grapefruit" In the routine of his duties, an abstracter on THE JOURNAL made a brief summary of it for Current Medical Literature, and by two or three oversights the abstract was published The editor will never cease to regret it In the first place there is not the slightest scientific evidence that any kind of grapefruit has any curative virtues in diabetes The article mentioned vaunts the alleged potency of a special brand of grapefruit, it refers to the case of a Dr Roy who details his alleged cure of a serious case of diabetes, and now, apparently, it has led to a real-estate promotion and to the foundation of a sanatorium company from a small district in Florida They, it seems, are going to sell this "medicinal fruit," limiting it to patients of the institution or to physicians' prescriptions They are going to examine and certify this fruit, and they are going to have it in cans when the fresh fruit is out of season The scheme ought to sell a lot of grapefruit The Michigan physicians assert that their particular "Howey-in-the-Hills grapefruit" is good for arteriosclerosis also We are sorry that the Michigan journal printed such an unscientific article We are even more sorry that our abstracter made his little abstract, we are absolutely overcome with chagrin at the oversight that let the little abstract into the pages of THE JOURNAL We hope that everybody who buys the grapefruit will enjoy it—as grapefruit, not as "patent medicine" Florida papers please copy!

THE HEALTH DEMONSTRATION

In the annual report of the general director of the Commonwealth Fund for 1927 appears a paragraph concerning the relationships of demonstrations made under this fund to the practitioners of the communities served This paragraph is an indication of the importance of conducting such demonstrations in full accord with the local medical profession In a recent issue of THE JOURNAL the views of the physicians in Fargo, N D, relative to the demonstration held in that city were set forth Fargo was one of the cities in which the Commonwealth Fund did its work The important paragraph reads

> Closely allied to this popular demand for health services is the attitude of the local practitioner toward health supervision The medical societies in the four communities have officially endorsed the demonstration program as a whole Individual practitioners have gone further in indicating that they recognize and welcome the aid of the demonstration in promoting preventive medical service In a group of doctors who were recently asked to state their impression of the results of the community health program as reflected in their own practice one called attention to "better response in supervision of well infants ' another to "more attention to nose and throat and eyes of apparently healthy children" Another reported, "Am seeing more children in my practice than formerly," still another, "Women report well for prenatal and postnatal observation" Another physician in the same community has called attention to the fact that the sound medical and nursing procedures of the demonstration tend to strengthen the position of the well trained practitioner in competition with the cultist and faddist As a corollary to an increasing desire for health supervision, the physicians in the demonstration communities have responded cordially to special opportunities for improving their own preventive practice—attending institutes on preventive pediatrics, calling the demonstration pediatricians into consultation, and in one case at least voluntarily suggesting special clinics to prepare themselves for increasing participation in the community health program Such attitudes on the part of both patient and physician should result in definite betterment of the health of the growing generation

Obviously the attempt in any demonstration should be to give to the community confidence in its medical profession, and to show to the medical profession the technic and the importance of the practice of preventive medicine by the general practitioner

In no field of medicine is such far-reaching imposition practiced as in the giving of mixed gland preparations, in the case of some physicians it has assumed the proportions of a medical cult

Electricity, like every other potent force used in medicine, is a two-edged sword, in the hands of the ignorant it may work disaster

Medical economics—the science of making a living while satisfying the notions of socialists and social workers

Nothing costs so much to build as good will—but it is the tenderest of plants and easily destroyed

Association News

ABSTRACT OF MINUTES OF ANNUAL MEETING OF BOARD OF TRUSTEES, HELD IN CHICAGO, FEB 17, 1928

An informal meeting of the Board of Trustees of the American Medical Association was held in Chicago, Thursday, February 16, and the regular meeting convened on Friday, February 17

EMPLOYMENT OF AN ECONOMIST

Further consideration was given to the advisability of the employment of an economist who might undertake studies of economic questions under the auspices of the American Medical Association This matter was first considered by the Board at its November meeting

INCREASE IN PRICE OF QUARTERLY CUMULATIVE INDEX MEDICUS

Because of the large expense incident to the publication of the *Quarterly Cumulative Index Medicus,* it was decided to increase the subscription price of this publication to $12 a year, to take effect, Jan 1, 1929

TREATMENT OF EX-SERVICE MEN AT PUBLIC EXPENSE

A special committee of the Board of Trustees was instructed to prepare a report to be submitted as a part of the report of the Board to the House of Delegates, relative to the treatment at public expense of ex-service men for diseases and injuries incurred in civil life

ELECTIONS

Nominations to fill vacancies on the Council on Pharmacy and Chemistry, on the editorial boards of the special journals, and on various committees were considered, with the result that the following men were elected to positions on these bodies

Drs R A Hatcher, E E Irons and W T Longcope to succeed themselves on the Council on Pharmacy and Chemistry

Drs Robert Lynch, S B Wolbach, E A Graham, W T Longcope, Stanley Cobb and W McKim Marriott to succeed themselves on the editorial boards of the *Archives of Otolaryngology, Archives of Pathology and Laboratory Medicine Archives of Surgery, Archives of Internal Medicine, Archives of Neurology and Psychiatry* and the *American Journal of Diseases of Children,* respectively

Dr John C Gittings of Philadelphia also was elected to the editorial board of the *American Journal of Diseases of Children,* to succeed Dr John Howland (deceased)

Dr J J Morton, Rochester, N Y, was elected to succeed Dr Charles H Frazier on the Committee on Scientific Research

Dr Elliott C Cutler of Cleveland was elected to succeed Dr Montrose Burrows as chairman of the Committee on the Protection of Medical Research, and Dr William Pepper was elected to succeed himself on that committee

SCIENTIFIC QUESTIONS

A communication from the Conference of Section Secretaries with the Council on Scientific Assembly was presented This expressed the opinion of the members of that conference that questions of purely scientific bearing coming before the House of Delegates should be referred to the Council on Scientific Assembly or, when necessary, to that council and the Council on Pharmacy and Chemistry It was the sense of the Conference of Section Secretaries with the Council on Scientific Assembly that little good could be accomplished by referring such questions to the sections

SECTION TRANSACTIONS

The Secretary and General Manager was instructed by the Board of Trustees to communicate with the officers of the various sections of the Scientific Assembly and to request them to inform their members that, if the transactions of any section are not ordered in sufficient number to justify their publication, the printing of the transactions of that section will be discontinued

SECOND PUBLIC HEALTH CONFERENCE

The program for the Second Conference on Public Health to be held March 30-31, was approved by the Board of Trustees This program is to be as follows

1 Free and Part Pay Clinics The lay point of view is to be presented by Dr E H Lewinski Corwin of New York and the point of view of the profession by Dr L L Bigelow Columbus Ohio

2 Health Demonstrations Courtenay A Dinwiddie of the Commonwealth Fund who has had charge of the demonstrations conducted by that fund will present the point of view of the Commonwealth Fund Dr C C Brown of Mansfield Ohio will present the facts concerning the health demonstration held in that city and the point of view of the profession based on their actual experience with that demonstration

3 Public Health Surveys This subject will be presented by Dr Rosco Leland of the headquarters office and will be thrown open for general discussion

WOMAN S AUXILIARY

The Board of Trustees approved the requests of the president of the Woman's Auxiliary, Mrs John O McReynolds, relative to changing the name of the Liaison Committee of the Woman's Auxiliary to Advisory Committee of the Woman s Auxiliary, and to having the names of the committee printed on the stationery of the Woman's Auxiliary

REPRESENTATION IN AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE AND ASSOCIATED SOCIETIES

The Board appointed Drs George M Kober and George M Piersol to represent the Association in the American Association for the Advancement of Science and Associated Societies Drs Kober and Piersol have represented the Association in this capacity for several years

The rest of the meeting was devoted to the consideration, seriatim, of the report of the Board of Trustees to the House of Delegates, reports of standing and special committees, budgets and other routine matters

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS EDUCATION, PUBLIC HEALTH ETC)

CONNECTICUT

Yale Becomes Practically an Honor School —A new curriculum has been adopted at Yale University School of Medicine New Haven, which gives the student liberty in accordance with his ability and makes the institution practically an honor school The dean, Dr Milton C Winternitz, says that for years an objective of the faculty has been to discriminate less between the prospective student candidates for the degree of doctor of medicine and that of doctor of philosophy in various biologic sciences Without reducing the number, he believes, this procedure will produce better trained physicians and contribute to the movement in preventive medicine There are several hundred students in the Graduate School of Yale University devoting themselves to one or another branch of biology with the idea of becoming teachers and investigators As time has gone on they not infrequently have concluded after one or more years of training in some field of biology, to prepare themselves for the practice of medicine and, to allow this interchange, a greater elasticity between the graduate school and the school of medicine has developed The Yale school of medicine occupies a unique position in this regard, as no line of cleavage for the university departments occurs, irrespective of the schools they serve Candidates for a doctor of philosophy and those for a doctor of medicine find themselves in the same building and taught by the same instructors Experience, the dean continues, has indicated the inadvisability of inelastic stratification of the curriculum for men of this type, so the medical school has introduced the same liberal educational policies for candidates for a doctor of medicine as were introduced years ago in the graduate school for candidates for a doctor of philosophy The school of medicine now prefers to admit students primarily on account of their interest in the biologic sciences rather than on a preconceived idea of becoming doctors of medicine The student selects the courses in biology which he desires to pursue and for which the instructor considers he is prepared Later he concludes whether he will make a more successful doctor of philosophy or a doctor of medicine, and then presents himself for qualification This is the first examination required of him, and it may be in less than a year and a half after admission to the school or twice as long Students are not grouped by classes The student, during the preliminary period, regards his instructor as a co worker After the completion of the first test and having determined on his career, he proceeds further with his education according to the same liberal principle and appears again for examination before graduation, after having completed the fundamental courses and having had his thesis accepted The fundamental courses at Yale have been reduced to a minimum The student has practically half his time for elective study, he is not taught, but assisted in acquiring knowledge The class rooms are in many instances designed so that the student is considered practically a member of the staff A fundamental point of this system is the complete liberty of the student to acquire the knowledge he requires for the completion of his qualification examination or graduation If he feels a subject may be pursued more efficiently at another institution, at home or abroad, it is his privilege to take advantage of his conclusion for all that is required of him is the demonstration of knowledge in the subject, grades and hours of work are not even recorded in the administrative office

ILLINOIS

Society News—Dr Howard B Goodrich, Hannibal, Mo, addressed the Adams County Medical Society, Quincy, February 13, on "The Prevention of Puerperal Infection," and Dr Francis E Sultzman, Hannibal, on "Throat and Upper Respiratory Infections"——The twenty-first annual meeting of the Illinois State Academy of Science will be held at the Illinois State Normal University, Normal, May 4-5 ——Dr Gerald M Cline, Bloomington, addressed the Ford County Medical Society, Paxton, January 17, on "Infant Feeding"

The Lawyers Want the Banks to Stop Practicing Law—The Illinois and the Chicago Bar associations have brought disbarment proceedings in the Illinois Supreme Court, challenging the right of banks and trust companies to engage in the practice of law and asking that a certain bank in Chicago be forbidden to collect fees for legal service performed by its attorneys and that all other banks and trust companies be similarly enjoined The object is to break up a practice which has grown in financial institutions of having their lawyers perform services in connection with the transactions of customers

Chicago

Lucy Hagenow's License Revoked—The license of Lucy Hagenow, a midwife who was recently sentenced to fourteen years in the penitentiary for murder by abortion, has been revoked by the Illinois Department of Registration and Education

Foreign Health Posters—For several years the Chicago Tuberculosis Institute has been collecting posters on public health from various countries The foreign health posters are now on exhibition at the University of Illinois School of Medicine, Harrison and Wood streets, and later will be exhibited at Northwestern University Medical School, Chicago Avenue near the lake

Personal — Edwin R Embree, who has been with the Rockefeller Foundation, New York, since 1917, and was vice president for the last year, became president of the Julius Rosenwald Fund with headquarters in Chicago, January 1 ——Dr Louis Leiter has been appointed secretary of the department of medicine of the University of Chicago, Dr Roy Grinker, clinical instructor in neurology, Dr Marie Ortmayer, part-time clinical instructor in the department of medicine, Dr Ralston Paterson, instructor in roentgenology, and Dr Jose Santos, instructor in the department of surgery

Beds for Indigent Pernicious Anemia Patients—The University of Chicago Medical Clinics and the Otho S A Sprague Memorial Institute have organized a cooperative program to continue the treatment and study of pernicious anemia inaugurated by the late Dr Karl K Koessler Beds have been set aside in the Billings Hospital for the care of patients, and the laboratories of the institute will conduct their part of the program A limited number of patients who cannot finance their own hospital care will be supported during the course of their treatment by the institutions engaged in the work Dr H Gideon Wells is director of the institute

Hospital News—Max Epstein has given $100,000 to the building fund of the new lying-in hospital on the campus of the University of Chicago, Mr Epstein previously endowed a clinic at the university which bears his name——Ground has been broken for the new $1,500,000 Passavant Hospital on McKinlock Campus of Northwestern University Medical School at Superior Street and Fairbanks Court The old Passavant Hospital was abandoned two years ago——The Chicago Tuberculosis Institute has affiliated with the medical center at the University of Chicago, it is reported The work of the institute's sanatorium at Naperville under this arrangement will be controlled by the university, and admission to the sanatorium will be through the university's outpatient department Mrs Theodore B Sachs will continue as administrative head of the sanatorium——The Lutheran Memorial Hospital, 1116 North Kedzie Avenue, is conducting a campaign to raise $750 000 to provide a nurses' home, a children's department and to enlarge the maternity section ——The Chicago Municipal Tuberculosis Sanitarium has opened a 225 bed addition costing $1 000,000 The first two floors consist of all single rooms to be used for patients suffering from complications, the third floor is entirely for the care of children

Society News—Dr Frank C Mann, Mayo Clinic, Rochester, Minn, delivered the fourth L L McArthur lecture of the Billings Foundation before the Chicago Institute of Medicine, City Club, February 24, on "Experimental Peptic Ulcer"——Dr Isaac A Abt, president of the Chicago Medical Society, gave a "Review of the Treatment of the Pneumonias of Young Childhood" at a joint meeting of the society and the southside branch, February 29 Drs Harry M Richter spoke on 'The Basis of the Surgical Treatment of Thyrotoxicosis,' and Charles J Drueck on "Management of Inoperable Carcinoma of the Rectum' ——Dr Austin A Hayden will address the Chicago Laryngological and Otological Society March 5, at the Stevens Restaurant at 6 North Wabash Avenue on "Fifth Year Otolaryngology in the Average General Hospital" The discussants will be Drs Nathan P Colwell, secretary, Council on Medical Education and Hospitals of the American Medical Association, and Malcolm T MacEachern, director, hospital activities American College of Surgeons The deans of the medical schools of Chicago and members of their intern committees have been invited to this meeting Dr Jacques Holinger will speak on "Total Paralysis of the Vocal Cord"——Drs Preston M Hickey, Ann Arbor, Mich and Lawrence Reynolds, Detroit will address the Chicago Roentgen Society, March 8, Virginia Hotel, on "Roentgen Examination of the Normal Larynx" and "Roentgen Examination of the Pathologic Larynx' respectively, and Dr Samuel J Fogelson on "Function of the Gallbladder in Pregnancy'——Members of the Chicago Medical Society are invited to be guests of the board of directors of the Valmora Sanatorium, Valmora, N M, at the grill room, Marshall Field Annex, March 15, 6 30 p m, for which tickets may be obtained from the presidents of the branch societies This institution is incorporated not for profit for the treatment of tuberculosis——Dr Ales Hrdlicka, Washington D C, lectured at the University of Chicago, January 25 and 26, on 'Origin and Evolution of Man in the Light of the Latest Knowledge" and "The Lessons of Human Evolution"——The class of '89 of Rush Medical College held its thirty-ninth annual reunion at the Bismarck Hotel, February 20, ten of the seventy living members were present

KENTUCKY

Society News—Because of the condition of the roads no joint meetings of the Adair, Green and Taylor Medical Society will be held the first three months of the year an all-day meeting is planned for June in which noted speakers will be invited to take part At the annual meeting in December at Campbellsville College Drs Ellis S Allen and Albert L Bass, Louisville, gave addresses on "Value of the Ophthalmoscope' and "Malignancy," respectively

Personal—Dr James M Salmon, Ashland, has been elected president of the Central Tri-State Medical Society for the ensuing year——Dr Samuel B Marks has succeeded Dr Waller O Bullock as president of the board of health of Lexington, Dr Bullock served on the board for about fifteen years——The health officer of Louisville, Dr Clarence H Harris, has been appointed collaborating epidemiologist for Kentucky in the U S Public Health Service at a salary of $1 a year——Dr Luther Bach has resigned as director of the Breathitt County Health Unit and will go to Bellevue

MASSACHUSETTS

Personal—Prof James O Jordan, for twenty-one years a chemist in the Boston City Health Department and later a milk inspector, died, January 6 He was for more than ten years an assistant in materia medica at Harvard University Medical School——An oil portrait of Dr John W Farlow, for nearly twenty-five years librarian of the Boston Medical Library, has been hung in Holmes Hall

Licenses Revoked—The state board of registration in medicine revoked the licenses, Dec 29, 1927, of Dr Wallace P MacCallum, Boston, on evidence which is said to have shown gross misconduct in the practice of his profession, and of Dr Andreas F Christian, Boston on evidence which showed he had been guilty of deceit, malpractice and misconduct in the professional care of a patient and for violation of the prohibition act The license of Dr Hormidas Choquette, New Bedford, was revoked, Sept 8, 1927, for gross misconduct in the practice of his profession as shown by evidence that he had performed an illegal operation

Dr Otis Honored—About 150 persons attended a dinner at the University Club, Boston, January 31, to honor Dr Edward O Otis and to mark the completion of his forty-two years' service on the staff of the Boston Dispensary A handsome humidor with an engraved silver plate was presented to him Dr Otis, who is nearly 80 years of age, was appointed surgeon to the Boston Dispensary in 1886 He was formerly president of the National Tuberculosis Association, of the American Public Health Association and of the American Climatological Association, he was a delegate in 1901 to the Congress on Tuberculosis in London, and in 1912 to the International Convention on Tuberculosis in Rome He is the author of a book for laymen on tuberculosis, for many years he has been a member of the Massachusetts Medical Society and he was president of the Massachusetts Tuberculosis League from 1919 to 1925 Dr Maynard Ladd, president of the dispensary, who presided at the dinner, referred to the guest of honor as "the grand old man of medicine," internationally known in the field of tuberculosis

Boston Claims Typhoid and Tuberculosis Records—Mortality statistics indicate that the death rate in Boston in 1927 was 14 per thousand population, a rate which has been excelled only in 1921, when it was 13 49 The birth rate for 1927 was 23 9 per thousand population, a slight rise over the two previous years The infant mortality rate was 76 78 a considerable decline over the last two years and a slight increase over the infant mortality rate of 1924 Only nine deaths were due to typhoid, a rate of 1 13 per hundred thousand population, and a record, the health department states, which is probably excelled by no other large city in the world It is considered remarkable because two local typhoid outbreaks brought the reported number of cases up to 121, of which twenty-two were in nonresidents There was a slight increase in deaths from diphtheria, the total being sixty, six more than in 1926 The death rate from all forms of tuberculosis was the lowest ever recorded in Boston, 86 1 per hundred thousand population The death rate (75 8) from pulmonary tuberculosis was also the lowest ever attained in this city Rabies among animals increased, sixty-three persons who were unable to pay were given antirabic treatment at the expense of the city Although Massachusetts experienced the worst epidemic of infantile paralysis in its history, Boston suffered little compared with other cities

MINNESOTA

Personal—Dr Charles E Proshek, Minneapolis, has been decorated by the king of Serbia for medical service in the World War——Dr Charles H Mayo, Rochester, has been elected a vice president of the American Stomatological Association

Society News—Dr Daniel N Eisendrath, Chicago, addressed the Hennepin County Medical Society, Minneapolis, February 29, on "Diagnosis and Treatment of Secretory and Obstructive Anuria"——Dr Steven H Baxter has been elected president of the Surgical Society of Minneapolis for 1928

MISSISSIPPI

Society News—At a meeting of the South Mississippi Medical Society, March 8, South Mississippi Charity Hospital, the speakers will be Drs Urban Maes, New Orleans, Walter W Crawford, Hattiesburg, and Harold J Mixson, Laurel——At the January 27 meeting of the North Mississippi Six Counties Medical Society, New Albany, the following speakers from Memphis read papers Drs James B Stanford, William T Black, Charles H Heacock and John C Ayres Dr Billy S Guyton Oxford, spoke on "Asthma Dr Guyton was elected president of the society for the ensuing year——Drs John A K Birchett, Jr, addressed the Issaquena-Sharkey-Warren Counties Medical Society, Vicksburg, February 14, on "Observations on the Thymus' Albert K Barrier, Rolling Fork, on "Syphilis," and Hugh H Haralson, Vicksburg, on "Diagnosis of Varicella"

MISSOURI

Another Effort to Aid Crippled Children—A group of citizens met in St Louis last month to organize the Eugene Field Foundation for the Relief of Crippled Children The immediate object is to raise $100 000 by April 1 to meet the emergency caused by the exhaustion of the state appropriation of $35,000 for the care of crippled children The foundation, which will include representative persons from all parts of the state, will aim to provide hospital care and education for indigent crippled children, provide appliances and maintain hospital wards Ninety days after this work was begun at the University of Missouri last July, thirty six children had been admitted from eighteen counties and the hospital space exhausted, with four fifths of the counties still to be heard from

Hospital News—The Southeast Missouri Hospital, Cape Girardeau, was dedicated January 8 This four story structure, costing $150 000, has sun parlors, recreation rooms, laboratories, nurses' home and other conveniences The principal speaker at the dedication was Dr Benjamin A Wilkes superintendent, Missouri Baptist Sanatorium St Louis The chief of the medical staff is Dr Daniel H Hope——The sons of Mr Seeley Mudd of California have given $25 000 in memory of their father, which will be used to establish a department for the treatment of cancer by deep roentgen-ray therapy at St Luke's Hospital, St Louis——The forty bed Brandon Hospital, costing about $100 000, was dedicated and opened, January 22, at Poplar Bluff Dr Walter L Brandon is surgeon in charge

Mr Mallinckrodt's Will—Edward Mallinckrodt, St Louis chemical manufacturer who died February 1 aged 83 left an estate, estimated at about $2,000,000, to be used for science religion, charity and education Having long since adequately provided for his family, he mentions Washington University and St Luke's Hospital in his will stipulating that at the discretion of his son the estate might be divided equally or unequally between these institutions, or that any or all of it might be diverted to other philanthropies, as the son elects The remainder of the total, provided the estate remains untouched during his son's life, is to be divided equally between the university and the hospital Mr Mallinckrodt was a member of the board of trustees of Washington University, to which position now his son has been elected The father, during his life, gave about $1,000,000 to the medical school of the university, about $500,000 to Harvard University, and many thousands to St Luke's Hospital, St Louis

Society News—Program on Ethics—The Jackson County Medical Society gave a program, February 14, under the auspices of the Phi Beta Pi Medical Fraternity, Dr Frank G Nifong, Columbia, read a paper on the 'Moral Aspect of Division of Fees," Dr Dudley A Robnett, Columbia on "Moral Aspect of Physicians Relative to Prescribing Liquor or Its Use as a Beverage," and Dr Fred W Bailey, St Louis "Relation That the Physician Should Maintain Toward Other Physicians"——The St Louis Medical Society would be pleased if one of its members would donate a piano——Drs Leland B Alford and Raymond C Fagley addressed the St Louis Medical Society, February 28, on dextrose in the treatment of acute and chronic encephalitis, Dr French K Hansel spoke on malignant tumors of the nasopharynx——The St Louis Heart Association provided the program, February 21, for the St Louis Medical Society Moving pictures of the heart s action were exhibited, Dr Arthur E Strauss read a paper on "Clinical Myocarditis," and Drs Eugene Lee Shrader and Eugene F Moore on 'Clinical Studies of Bundle Branch Block"

Survey of Health Activities in St Louis—A comprehensive survey of the health activities of St Louis was recently made by official and volunteer agencies A report was made to the St Louis Medical Society, January 10, by Dr Haven Emerson, New York, consultant in the survey, and W F Walker, D P H, field director, committee on administrative practice, American Public Health Association The survey was made at the invitation of the city commissioner of health and a citizens' committee for the promotion of St Louis health activities financed by the Community Fund It was undertaken to determine what the situation is as to hospital facilities, dispensary work, social service and visiting nurses The general impression derived from the report, the bulletin of the St. Louis Medical Society says, is that St Louis is active and interested in public health activities of the community, yet there are faults in the method of conducting affairs which warrant closer study and vigorous effort at correction The survey showed that of the $34 26 expended per capita for general government, the expenditure for health purposes through official channels is $0 91, or 2 06 per cent of the total Among the cities of the country of more than 500,000 people, of which there are fourteen, St Louis is tenth on the list as to the per capita expenditure for health They are in order Buffalo ($1 56), Boston, Detroit, Milwaukee, Cleveland, Los Angeles, San Francisco, Chicago, Pittsburgh, St Louis, New York, Baltimore, Washington, D C, Philadelphia ($0 62) Mortality in St Louis has gradually declined, yet not so much as it has for the entire registration area On the basis of a perfect rate of 1,000 for the total public health activities, St Louis was given an appraisal in the survey of 783 points, or 78 per cent The report recommends that the community council establish a hospital and health division to plan, promote and coordinate those community functions which are necessary for health protection and for the care of the sick, on which all allied professional groups and all operating agencies should be represented The service of a full-time secretary would be required to direct the work of the division

NEW YORK

Erie County Medical Society and the Buffalo Clinics—At a meeting of the Medical Society of the County of Erie, Buffalo, February 15, resolutions were unanimously adopted to support the Cattaraugus County Medical Society in its stand against the continuance of the Milbank Fund's public health demonstration in Cattaraugus County The resolutions also called attention to the retrenchment policy of the Buffalo city administration and declared that the health centers and well baby clinics operated by the city of Buffalo and Erie County should be abolished in the interest of economy and to prevent further pauperization of the public The society declared that it is not necessary for the good of either to interpose any agency between the physician and the patient Buffalo operates six health centers and seventeen well baby clinics through its health department The discussion which preceded the adoption of this resolution followed addresses by Drs Joseph P Garen and Raymond B Morris of Olean, president and secretary of the Cattaraugus County Medical Society, and was participated in by Dr Harry R Trick, Buffalo, president-elect of the Medical Society of the State of New York, Dr Edward E Haley, Buffalo, and many others It continued until 1 o clock in the morning

Milbank Fund Report on Cattaraugus Demonstration—The president of the Milbank Memorial Fund, Edward W Sheldon, notes in the *Quarterly Bulletin* that the Cattaraugus County Health Demonstration completed its fifth year, Dec 31, 1927, and that the board of supervisors unanimously voted funds to finance, without modification, the activities which the county board of health included in its program for 1928 Cattaraugus County witnessed during the five-year demonstration, he said, a reduction of about one third in the tuberculosis death rate and of nearly one fifth in the infant mortality rate Since the only important factor in the environment in this county which has changed for years is the institution of intensive public health work, it is difficult to escape the conclusion, it is said, that there is a direct relationship between this work and the reduction in sickness and death rates Practical contributions of the demonstration, Mr Sheldon continues, have been the establishment of the first county health department and the first county-wide school health unit in the state He notes that the county medical society made objections to the program and budget of the county health department, apparently because of the concern of some physicians regarding the possible effect on medical practice. He relates that, under the leadership of the county board of health, the physicians gave wholehearted cooperation in the development of the county health department, they helped build up the program for the prevention of tuberculosis, helped to institute a program to protect the health of pregnant women and of babies and younger children, aided in the correction of over half of the physical defects found among rural children, and cooperated in a campaign of immunization against diphtheria

New York City

First Class Dinner in Twenty Years—The class of 1908 of University and Bellevue Hospital Medical College will hold its first anniversary dinner, March 10 at Hotel Roosevelt all members are cordially invited The speakers will be Drs George D Stewart, Harlow Brooks, Robert J Carlisle and Dean Samuel A Brown

Fund to Found Chair in Pathology—The alumni of the College of Physicians and Surgeons of Columbia University have donated to the university $128,000 to be held in trust until it reaches $200,000, to found a chair in pathology to be called the Francis Delafield Professorship in honor of the founder of the pathologic laboratory at the college.

Dinner to Senator André Honnorat—The American committee for the American dormitory in University City, Paris will give a dinner at the Hotel Biltmore, March 9, which will be attended by a distinguished group of educational leaders and will be given in honor of Senator Andre Honnorat head of the Cite Universitaire Foundation and former French minister of education and fine arts George W Wickersham will preside among the speakers will be Charles Evan Hughes and probably President Abbott Lawrence Lowell of Harvard University There will be no money raising at the dinner

Recreation—Girls Prefer Dancing—The director of the Welfare Council of New York announces that thirteen organizations concerned with the direction of recreation and character building for the half million girls in Greater New York have organized a section of the council Prof Jay B Nash of New York University, who made an appraisal of public recreational facilities, has pointed out that an inquiry among continuation school students showed that dancing was the favorite recreation of 92 per cent of the girls and only 2 per cent of the boys He said there are more facilities in New York for noncommercial recreation than in almost any other city in America The new recreation section of the welfare council will seek a better basis for community planning and better standards of social work The number of agencies in the Welfare Council of New York now is 639, of which 135 are concerned with family welfare, 160 with child welfare 297 with health, and forty-seven primarily with recreation, education and neighborhood activities

Opinions on Private Health Demonstrations—At a luncheon, February 23 under the auspices of the community health councils of the Bellevue-Yorkville Health Demonstration, the East Harlem Health Center and the East Harlem Nursing and Health Demonstration, Dr Louis I Harris, city health commissioner, presided The luncheon which was in connection with the third annual New York Health Conference, was attended by more than 400 persons Among the speakers were Dr Linsly R Williams, director, New York Academy of Medicine, Mr John A Kingsbury, secretary, Milbank Memorial Fund, and Homer Folks According to the New York *Times* Dr Harris stated that privately conducted health demonstrations were "sapping the strength of the official health body' and that he saw no reason for the existence of private agencies in the public health field in New York except as advisory committees He said 'the city of New York has been a pioneer in public health work since the close of the Civil War The health department is the logical agency for this work We can do it just as well as private agencies If wealthy men would supply the necessary money we could do public health work and cover the entire city as it should be done, instead of just a small section We have trained workers and the organization A volunteer health organization ought to be essentially a 'help organization The private agencies that have money to spend could best help by appointing an advisory council of public health experts as a board of trustees who will counsel the health commissioner or duly constituted health officers how most wisely to expend such private funds, leaving the health department free to conduct health work on a more intensive and wider scale without competition by private agencies' Mr Kingsbury is reported to have said, "I quite agree with Dr Harris that the city should be in charge of health work That is the purpose of a health demonstration, to show what can be done But the city has not the money to spend' Dr Williams, whose subject was, "The Doctor and Health Activities," said that "the county medical society should be the leader in all public health activities and should inaugurate new measures Human nature exists in physicians as in other classes of society and the doctor naturally reacts in opposition to projects in regard to which he has not been consulted" He urged that social welfare agencies engaged in any type of health activity keep the county medical societies informed of the work and seek advice and council of them before undertaking new work

PENNSYLVANIA

Hospital News—The George F Geisinger Memorial Hospital, Danville, dedicated a $300,000 addition, January 12——Mr Fred M Kirby will give to the city of Wilkes-Barre a health center, costing $200,000, as a memorial to his mother

State Health Department Items—The Pennsylvania State Department of Health has had inspectors in Philadelphia, recently, endeavoring to complete 503 delayed birth certificates which a few physicians neglected to provide The local office of vital statistics reported a still greater number of unreported births but birth certificates for nearly 300 of them were completed by follow-up work Only a few physicians have left themselves open to prosecution for failing to supply a birth certificate within the required period of ten days——Nearly 8,800 cases of venereal disease were brought into the fifty-seven free clinics operated by the commonwealth during 1927, and 3,157 of these were either cured or made noninfectious through treatment

Personal—Dr James D Heard, Pittsburgh, was elected president of the Pennsylvania Heart Association for 1928——Dr Joseph C Reifsnyder, Scranton, was elected president, February 13, of the Pennsylvania Public Health Association——Dr Robert A Gaughan has been named superintendent and chief surgeon of the Hazleton State Hospital to succeed the late Dr Walter A Lathrop——Dr Henry R M Landis, Philadelphia, director, clinical and sociologic departments, Henry Phipps Institute was elected president of the Pennsylvania Tuberculosis Society at the annual meeting in Harrisburg The board of directors of the society was increased to thirty-seven at this meeting and Dr Wesley F Kunkle, Williamsport, was elected director

Philadelphia

Society News—Dr Jean P Pratt, Henry Ford Hospital, Detroit, addressed the Philadelphia Obstetrical Society, March 1, on 'Neuropsychiatric Manifestations Seen in the Practice of Obstetrics and Gynecology", the discussants were Drs Charles W Burr, Edward A Strecker and Barton Cooke Hirst——Among others, Dr Charles Mazer addressed the Northern Medical Association of Philadelphia, February 20, on "The Responsibility of Defective Kidney Drainage for Obscure Abdominal Pain," illustrated with lantern slides——Dr Charles K Mills opened the discussion on brain tumors before the Philadelphia Neurological Society, February 24, and was followed by Dr James H Lloyd This was a continuation of the discussion before the society at its January meeting

SOUTH DAKOTA

Personal—Dr Edson C Miller has been made a life member of the Brookings Kiwanis Club, Dr Miller, who has practiced in that community more than twenty-five years, has served as state senator and held other positions of trust He retired from active practice at 80 years of age——Dr Edward R Lindner has been appointed governor of the Battle Mountain Sanatorium, Hot Springs——Dr William A George, Selby, has been appointed county physician of Walworth and Dr Andrew V Rock, Mobridge, assistant

Another Magazine "Agent"—Physicians of Clark have been visited by a Mr G E Kennedy who represented himself as a bonded representative of the Mid-West Circulation Company, 432 Railway Exchange Building, Chicago, and took orders for well known magazines The magazines were not delivered, and an inquiry has been made at this office It was found that there was no Mid-West Circulation Company at the address given, and the agent of the building believed also that there never had been

Society News—At the annual banquet of the Aberdeen District Medical Society, January 16, Dr John E Dunn, Groton, was elected president, succeeding Dr Willard A Bates, Aberdeen, Dr Robert D Alway, Aberdeen, gave an address on "Clinics in Vienna", Dr Solon Marx White, Minneapolis, on "Etiology, Clinical Recognition and Management of Various Types of Tachycardias," and Dr Frank J Tobin, Mitchell, on 'Diagnosis of Surgical Lesions of the Kidney and Ureter'——At the annual meeting of the Whetstone Valley District Medical Society (twelfth district), January 16, Drs Albert L Severeide, Webster, read a paper on 'Undulant Fever in South Dakota", Dr Faris F Pfister, Webster, "Eczema in Infancy and Early Youth," and Dr Albert E. Brown, Webster, on "Eclampsia" Dr Andrew P Hawkins, Waubay, was elected president for 1928

TEXAS

Chiropractor Convicted—S T McMurrain, Dallas, a chiropractor, was fined $50 and costs and sentenced to one day in the county jail by a jury, January 24, on a charge of practicing medicine without a license Among those who testified at the trial were Dr Thomas J Crowe, secretary, state board of medical examiners T E Sims said he had visited McMurrain three times for treatment and each time paid a $3 fee

Personal—Mrs John O McReynolds, Dallas, president of the Women's Auxiliary of the American Medical Association has offered a prize of $50 according to the *Atlantic Medical Journal,* to the state auxiliary which secures the largest number of subscriptions to *Hygeia* and a prize of $50 to the county auxiliary which secures the largest number of subscriptions in proportion to its membership——Dr Walter C Palmer has been elected health officer of the city of Ranger

Justices to Secure Vital Statistics—A new vital statistics law provides for a registrar for each justice precinct which will increase the number of registrars to about 1 500 and afford prompt registration of vital statistics in every nook of this great state The *Texas State Journal of Medicine* notes that the justice of the peace is the logical man for this newly created office of local registrar of vital statistics, and that to date the state health officer has appointed about 500 of them to perform that duty

Dr Outlaw Appointed Health Officer—Dr Phau R Outlaw has been appointed health officer of the city of El Paso to succeed the late Dr Richard A Wilson Dr Outlaw has been the assistant health officer for two years and a resident of El Paso for about fifteen years He is a graduate of Bellevue Hospital Medical College New York, was connected with the New Orleans Health Department for two years spent two years in Central America in yellow fever quarantine work, was engaged in health work in St Tammany Parish for four years and served during the World War

Society News—At a meeting of the Bexar County Medical Society, January 5, Dr Witten B Russ, San Antonio, read a paper on "Role of the Irritable Colon in Surgery," and Dr Daniel A Russell, San Antonio, on 'Practical Treatment of Sinusitis in Children"——The Dallas County Medical Society, January 12, voted to discontinue the use of the classified telephone directory for listing the names of physicians after the issue that is now being published Dr Eugene R Carpenter addressed the society on "Differential Diagnosis of Chronic Forms of Headache," and Dr Ramsey H Moore on "Mastoiditis in Infancy"——Dr Afranio do Amaral addressed the El Paso County Medical Society, recently on treatment of snake bites, and Col Martin L Crimmins, U S Army, retired, gave a summary of the research work that had been done in San Antonio on poisonous snakes——Dr Claude L Goodall, Waco, addressed the Falls County Medical Society, January 9, Marlin, on Hypertrophic Pyloric Stenosis in Infants"——Dr Solomon D David addressed the Harris County Medical Society, recently, on "Leggs' Disease in Its Late Stage with Report of Cases," and Dr Winfred Wilson, Memphis, on pyelitis At a meeting of the society January 4, Dr Samuel Gibbs Milliken Houston, read a paper on sickle cell anemia——Drs Samuel P Vineyard addressed the Potter County Medical Society, January 9, Amarillo, on 'Lobar Pneumonia", George M Cultra on "Influenza," and Don S Marsalis on "Complications of Lobar Pneumonia with Special Reference to Empyema"

WASHINGTON

Hospital News—The Virginia Mason Hospital has purchased the lot adjoining its present location at Terry Avenue and Seneca Street, Seattle, and will construct an addition during the year——St Joseph's Hospital, Bellingham, opened its new seventy-five bed H A Compton Pavilion to public inspection, January 15

Walla Walla Schools Were Not Closed—In "News of Epidemics," The Journal, February 4, stated that the schools of Walla Walla had been closed on account of smallpox The city and county health officer, Dr George H T Sparling writes that the schools have not been closed on account of an epidemic, that his experience shows that closing schools has no advantage, and that strict health supervision of children while in school is much better There is no excuse for closing schools on account of smallpox, he says, when we have vaccination as an absolute preventive More than 4,000 students in this county have been vaccinated and those that have not must remain out of school when smallpox is in the community The few cases which have occurred in and around Walla Walla this winter apparently have been mild

Society News—At the midwinter meeting of the North Pacific Pediatric Society, Seattle, January 28, the morning was devoted to the presentation of cases at the Children's Orthopedic Hospital Papers were read in the afternoon, among others, by Drs Stanley Graham, Vancouver, B C, on "Intussusception", James T Mason, Seattle, "Practical Points in Treatment of Undescended Testes in Children," and Herbert E Coe Seattle, "After-Care of Poliomyelitis"——Dr James Tate Mason will address the King County Medical Society, Seattle March 5, on "Postoperative Results in Peptic Ulcers, and Dr Charles F Eikenbary on "Supracondylar Fractures of the Elbow", Dr Harold Brunn, San Francisco, addressed the society, February 20, on "Cancer of the Lung", Dr Casper W Sharples on "Postoperative Complications of Appendicitis" and Dr Mark W McKinney on "New Classification and Treatment of Gangrenous Appendicitis"

WISCONSIN

Hospital News—The Lions Club of Milwaukee has presented to the Milwaukee Children s Hospital a specially constructed machine for the administration of oxygen which was the second one to be installed in that city

Society News—Dr Arthur F Byfield, Chicago, addressed the Milwaukee Academy of Medicine January 24, on 'Matters of Hematology of Interest to the General Practitioner," and Dr Frank W Mackoy, Milwaukee "Multiple Lesions of the Gastro-Intestinal Tract as Revealed by the Roentgen-Ray", Dr Arthur W Rogers, Oconomowoc, was elected president of the academy for 1928

Quack William M Horner Again Convicted.—Newspapers in Appleton, Wis, record the arrest of William M Horner on the charge of violating the Medical Practice Act of the State of Wisconsin This is said to be his third conviction in Wisconsin In the present instance, Horner was found guilty and fined $500 Horner, it seems has been acting as an associate of another quack, one C F Lahn, formerly of Shawano but now of Appleton In 1926, Horner was in Manitowoc, operating the "Perfect Health Clinic"

Personal—Dr John M Albino has been appointed school physician of Racine to succeed Dr Russell M Kurten, resigned——Dr Frederick A Thayer has been elected president of the Beloit Physicians and Surgeons Club——Dr Harry H Ainsworth, Birchwood, has been appointed a member of the state board of health succeeding Dr Lyman A Steffen, Antigo——Dr Frank F Bowman has been appointed health officer of the city of Madison, effective March 1, for a term of two years at a salary of $4,500 a year to succeed Dr Alexander M Carr, who resigned last summer Dr Bowman has been state epidemiologist

GENERAL

Anniversary of Russian Journal—The *Vratchebnoie Dielo* celebrated its tenth anniversary, January 1 This medical journal is being published by a group of professors of Kharkov University, among its editors is Professor Zlatogoroff, who visited the United States recently

Former Professor Sues Scientists—John A Detlefsen, Sc D, former professor of genetics, Wistar Institute of Anatomy, has brought suit for $46 500, according to the *Atlantic Medical Journal* against a dozen scientists and professors for alleged violation of contract, claiming that he was discharged as associate editor of *Biological Abstracts* last May without justification but that his services were accepted until October

Diphtheria Was More Prevalent Everywhere—During the last quarter of 1927, diphtheria was more prevalent in practically every country of Europe than during the corresponding period of the previous two years It did not occur in the form of epidemics but in a slow and moderate increase beginning in the late summer and reaching its maximum in November In France, for example, 2,840 cases were reported during this quarter in 1925 and 4,309 cases in 1927 The increase in the United States which began in the previous winter continued during the fourth quarter of 1927, but it was less than in the other quarters of the year, according to *Epidemiological Reports* of the Health Section of the League of Nations, the increase was 6 5 per cent in the fourth quarter, 40 1 per cent in the first, 56 6 in the second and 29 5 in the third quarter

Committee to Study Rheumatoid Conditions—A committee for the study, prevention and treatment of arthritis and rheumatoid conditions will meet in Philadelphia March 17, to inaugurate the first coordinated attempt in this country to deal with the rheumatoid problem The committee has been established by Dr Louis B Wilson, director, Mayo Foundation, Rochester, Minn to cooperate with the movement under way in Europe, where arthritis is a social problem and where large hospital provision is being made for the exclusive care of arthritic persons The members of the American committee are Drs Ralph Pemberton, 2120 Sansom Street, Philadelphia, chairman, Joseph L Miller, Chicago Robert B Osgood, Boston, Charles C Bass, New Orleans Russell L Cecil, New York, Melvin S Henderson, Rochester, Minn , J Archer O'Reilly, St Louis, Russell L Haden, Kansas City, Rea E Smith, Los Angeles, and Lewellys F Barker, Baltimore Dr Pemberton has visited several of those active in this movement in Europe In London the Red Cross has arranged to give a demonstration of the value of physical therapy in treating arthritis with the aim of increasing facilities and reaching more of the patients (The Journal, February 25, p 629)

Nominations for Leslie Dana Medal—Nominations will be received by the National Society for the Prevention of Blindness, 370 Seventh Avenue New York, until May 15 for the fourth award for the Leslie Dana medal, presented annually through the Missouri Association for the Blind to the person selected from the nominations received by the National Society for the Prevention of Blindness The medical profession and ophthalmologic societies are invited to submit names of persons deemed worthy of this honor under the following conditions set forth in the deed of gift (*a*) long meritorius service for the conservation of vision in the prevention and cure of diseases dangerous to eyesight, (*b*) research and instructions in ophthalmology and allied subjects (*c*) social service for the control of eye diseases, (*d*) special discoveries in the domain of general science or medicine of exceptional importance in conservation of vision The first Leslie Dana medal was awarded to Dr Edward Jackson Denver, the second to Miss Louisa Lee Schuyler, New York, and the third to Dr Lucien Howe, formerly of Buffalo and now of Cambridge, Mass The award will take place during the annual meeting of the American Academy of Ophthalmology and Otolaryngology in St Louis

Study of Parks for Recreation Purposes—At the request of President Coolidge, a national survey of municipal and county parks was undertaken about three years ago by the Playground and Recreation Association of America in cooperation with the American Institute of Park Executives for the purpose of gathering information and formulating principles to help meet the recreation needs of the public A personal visit was paid to most of the cities of more than 8 000 population, and a questionnaire was sent to smaller municipalities In all, 2,764 municipalities and forty five counties were reported on This vast amount of material about city and county parks will be published early this year in two volumes entitled "Parks A Manual of Municipal and County Parks' There are more than 400 illustrations, about 1 200 pages, and facts, figures and diagrams on parks which heretofore have not been available President Coolidge, in his introduction to the book, says in part

> Play for the child sport for youth and recreation for adults are essentials of normal life It is becoming generally recognized that the creation and maintenance of outdoor recreation facilities is a community duty in order that the whole public might participate in their enjoyment This presents a particular challenge to municipal and county administrations I am hopeful that the results of this study may be widely used to the end that our people even in cities may not be deprived of opportunities for wholesome play and recreation out of doors.

College of Physicians to Cruise on Caribbean—Following the twelfth annual clinical session of the American College of Physicians, New Orleans, March 5-9, a party of not more than seventy-five members will sail for Havana, Cristobal and the Canal Zone, where clinics have been arranged at the Ancon and Santo Tomas hospitals, the Herrick Clinic, Panama, and at Castilla, Honduras, at a United Fruit Company hospital The party will return, March 26 The program of the New Orleans meeting includes symposiums on epilepsy, diabetes tuberculosis and infectious diseases There will be addresses also by Maud Slye, Chicago, on "Cancer and Heredity' Drs Aristides Agramonte, Havana, on 'Research in Yellow Fever' Joseph Sailer, Philadelphia "Cardiac Conditions Counterindicating the Use of Digitalis," Hilding Berglund, Minneapolis, "Liver Diet in Pernicious Anemia," and Cyrus C Sturgis, Ann Arbor, Mich, on "Treatment of Pernicious Anemia with a Liver Fraction', Charles T Stone, Galveston Texas, "Occurrence of Severe Anemia in Myxedema', William W Duke, Kansas City, Mo, "Diagnosis and Treatment of the Anemias', Frank R Menne Portland, Ore, "Effect of Iodine on Histopathology of the

Thyroid Gland in the Instance of Hyperthyroidism", Leonard G Rowntree and George E Brown, Rochester Minn, 'Studies in Blood Volume with the Dye Method", David P Barr, St Louis, "Multiple Myeloma" Addresses of welcome will be given by Dr James Birney Guthrie, president Orleans Parish Medical Society, Albert B Dinwiddie, LL D, president of Tulane University, and Dr Charles C Bass, dean and professor of experimental medicine, Tulane University of Louisiana School of Medicine, and by Mayor O'Keefe, About half the time will be devoted to clinics at hospitals in New Orleans

The Oldest Function of the Public Health Service—For 129 years, the government has been furnishing medical aid to the American Merchant Marine, that is, the privately owned vessels and a smaller number of merchant vessels operated by the government, This, the oldest function of the U S Public Health Service, was the specific purpose for which the service was organized under the act of July 16 1798 Sick and injured sailors for more than a century have taken refuge in medical relief stations now operating in 152 ports of the United States and its possessions During 1927 there were 356,746 applications for treatment or examination, 1,288,061 hospital days given and 632,341 outpatient treatments supplied Seamen paid 20 cents a month for this service from 1799 to 1870, 40 cents from that time until 1884 The aggregate of all such collections was $15,794,807 63, while during this time more than $16,000,000 was spent for the maintenance of marine hospitals and relief stations, and nearly $3,500 000 for new constructions and repairs The tonnage tax first levied on American and other ships in 1884, to be devoted to the maintenance of the marine hospitals, yielded to the federal treasury in 1927 a revenue of $2,222,223 01 The U S Public Health Service details medical officers also to care for personnel of the U S Coast Guard, numbering about 11,000 officers and men, as it does for injured employees of the government who are patients of the U S Employees Compensation Commission, and these have been increased by the Longshoremen's and Harbor Workers' Compensation Act, which affects about 400,000 men The government, which is the largest employer of labor, pays compensation for disabling injuries and provides for retirement with pensions for employees grown old in its service The U S Public Health Service last year made more than 103,000 physical examinations not related to treatment, of which 22,090 were for applicants seeking civil service positions A 250 bed marine hospital for Cleveland has been proposed to accommodate patients of the veterans' bureau also in that port It will be built from funds derived from the sale of part of the present site which, in 1837, cost the government $12 000 and a portion of which recently sold for more than $1,000,000

PHILIPPINE ISLANDS

Epidemic of Pneumonia.—An epidemic of bronchopneumonia started, February 6, among 500 Filipinos en route to Hawaii on board the *President Cleveland* Seventeen of the Filipino steerage passengers died and were buried at sea before arriving at Honolulu, February 16, and fourteen others were seriously ill Cabin passengers were not involved

Natives Who Die Without Medical Care—Seventy per cent of those who died in the Philippine Islands last year were without any kind of medical care during the entire period of their illness Even in Manila, where there appears to be an abundance of physicians and nurses, 60 per cent of those who died did not have medical care, in some provinces the percentage was 80 Mr C D Alcott, writing from Manila for the New York *Herald Tribune,* bases these statements on a survey made by the bureau of public health and the Philippine chapter of the American Red Cross He says that in many villages there is one physician to five or six thousand persons Unlicensed practitioners and quacks outnumber the graduate physicians and nurses many times, but even patients treated by these were included among those who received medical treatment in this survey Progress has been made in educating the people in sanitation and health matters in the last twenty-five years, but only the surface of the work to be done has been touched The Red Cross has dental clinics throughout the islands, employing eighty-six dentists The health bureau has a similar chain, but its task is huge Living conditions in the old walled city in Manila were found a few months ago to be deplorable Large families were occupying "nooks in the old walls", other large families occupied a single room in old buildings and were taking in roomers The old fortress, which is about two miles in circumference, five blocks wide and twelve blocks long, held about 13,000 people Following an investigation of the sanitary situation under the supervision of Major Arthur Parker Hitchens, U S Army, the walled city has been ordered cleaned up and thinned out If this campaign succeeds within a year Manila's remnant of the past will be cleaned up yet still retain its old architecture and lore

FOREIGN

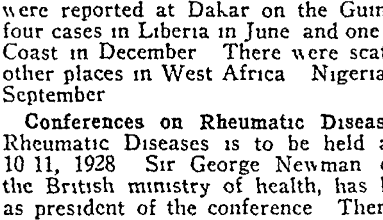
Spain's Birth Rate Falls—The Spanish government is seriously considering the decrease in the Spanish birth rate According to the New York *Times* the birth rate in 1926 was 29 9 per thousand, having decreased since 1913 from 30 03 The principal reason assigned is the diminishing number of marriages Despite the offer of prizes by the government to parents to encourage large families and the increasing of salaries of such parents who are employed by the government and despite the provision of free educational facilities through college for children of families of more than eight, the size of families in Spain is gradually shrinking

Testimonial to British Editor—A committee of distinguished scientists has taken steps to forward the establishment of a testimonial to the services to medical journalism and to the science and practice of medicine of Sir Dawson Williams who recently retired as editor of the *British Medical Journal* after thirty years' service The committee, which met January 20, at the Royal Society of Medicine, hopes that there will be a large number of contributions representing the profession as a whole Checks should be sent to Sir St Clair Thomson, treasurer of the fund, 64 Wimpole Street W I, London, with the envelop marked "Dawson Williams Testimonial"

Where Yellow Fever Persists—Yellow fever has not been reported in the Gold Coast Colony, Africa, since October, according to the Health Section of the League of Nations However, the number of cases reported during 1927 was considerably higher than in any year since the reappearance of yellow fever in this area An outbreak occurred in the Belgian Congo in the week ending Dec 23 1927 Six cases were reported at Dakar on the Guinea Coast in December, four cases in Liberia in June and one at Abidjan on the Ivory Coast in December There were scattered cases reported at other places in West Africa Nigeria had been exempt since September

Conferences on Rheumatic Diseases—A Conference on Rheumatic Diseases is to be held at Bath, England May 10 11, 1928 Sir George Newman chief medical officer of the British ministry of health, has kindly consented to act as president of the conference There will be three sessions on (1) social aspects presided over by Lord Dawson of Penn, physician to King George, (2) causation presided over by Sir Humphry D Rolleston (regius professor of physic, University of Cambridge), and (3) treatment, presided over by Sir Edward Farquhar Buzzard (regius professor of medicine, University of Oxford) The local honorable secretary is Dr Vincent M Coates, 10, Circus, Bath, England

New Institute of Biochemistry at Oxford—The new institute of biochemistry at Oxford University, England, has been formally opened The departments of biochemistry and physiology have in common a large lecture room and a library the second floor, which is entirely given over to research, will accommodate twenty workers there is also an aquarium an operating theater, an animal bathroom and a sterilizing room, and on the roof there is a small open-air laboratory Two classrooms on the first floor are separated by glass partitions, so they can be used as one room accommodating 100 students leading from the classrooms are dark rooms and the balance room A mezzanine floor provides a restroom, a room for constant temperature work, a research room and an animal house. The partitions are constructed so that they can be moved easily if rearrangement of the rooms should be desirable The main lecture theater is on the ground floor, where there are also dark rooms, a work shop and additional research rooms There are two electric elevators The building was made possible by a gift of £75 000 from the Rockefeller Foundation, New York The chair of biochemistry, which was endowed in 1920 by Mr Whitley, was occupied by Dr Benjamin Moore until his death in 1922 and since that time by Dr Rudolph A Peters



Foreign Letters

LONDON

(From Our Regular Correspondent)

Feb 5, 1928

Social Conditions and Cancer Mortality

The decennial supplement of the registrar-general, just published, shows that cancers in certain parts of the body are much more frequent in the poorer sections of society These parts are the mouth, tongue, larynx, throat and stomach, and the skin Cancers of all other parts of the body are equally distributed over the whole male population The registrar general offers the suggestion that the areas in which cancer is more common among the poorer sections of society are those which are 'exposed to irritation by environmental influences in the shape of food and drink, and since there is a 'sharp line of demarcation at the pylorus' this may well be the true explanation The group of cancers which are much commoner among poor people than among the well-to-do includes 51 per cent of all cancer cases—another fact of first-rate importance A further fact is that men are much more liable to suffer from cancer of the "exposed areas" (i e, mouth to stomach and skin) than are women With regard to occupation, the position of the clergy of all Protestant denominations is at the head of the list of occupations which have the lowest cancer mortality The extent of their advantage over any other occupation and the fact that cancer mortality is light also for Roman Catholic clergy seem to make it impossible to attribute it merely to chance Among occupations showing the highest mortality from cancer of the mouth, throat and stomach are those of waiters, barmen and cellarmen Cancer of the tongue is more frequently encountered in barmen than in any other occupational group The special association of cancer of those sites with dietetic conditions in confirmed to some extent by these discoveries The following table is given

Occupations in Order of Cancer Mortality (All Sites)

	Lowest Mortality		Highest Mortality
1	Ministers (not Anglican)	1	China kiln and oven men
2	Anglican clergy	2	Puddlers
3	Bank officials	3	Gas stokers
4	Machine compositors	4	Hat formers
5	Leather goods makers	5	Cotton spinners and piercers
6	Stone masons and quarriers	6	Barmen
7	Railway signalmen	7	Cellarmen
8	Photographers	8	Tin and copper miners (under ground)
9	Grain millers	9	Cutlery grinders
10	Farm bailiffs	10	Waiters

In the case of the cotton spinners and gas stokers, cancer occurs mostly on the skin Fishermen and bargemen, and, to a lesser extent, seamen show an excess of skin cancers over the average rate for all occupied and retired males an excess of 88 per cent for seamen, compared with that of 306 per cent for fishermen and 286 per cent for bargemen The suggestion is offered that in some of these cases tar may be the exciting cause It is further pointed out that nearly all occupations noted as showing excessive skin mortality from cancer show also an excessive mortality from cancer in sites other than the skin Cancer, then, of the skin, mouth, throat and stomach appears to be as definitely subject to social influences as does tuberculosis "It appears,' says the registrar-general, "that a large proportion at least of cancer mortality is of a preventable nature, for we must suppose that, if the conditions of life of all sections of society could be assimilated to those of its upper ranks, mortality from cancer of the exposed sites would fall, for all classes, to the class I level" Cancer in the "exposed areas" (tongue, throat and stomach) is 58 per cent of the average in social class I (upper and middle), and 140 per cent of the average in social class V (unskilled workers) The birth rate increases from the highest to the lowest in the social scale

The Jews Affected by the Falling Birth Rate

The falling birth rate of England was again illustrated in my letter of January 28 (The Journal, February 25, p 628) It is now found to affect the Jews, despite their prolificness In the great Jewish quarter of London, Whitechapel, according to the report of Dr D L Thomas, health officer, the birth rate was between 30 and 40 per thousand of the population before the war but is now down to 13 per thousand Jewish people there are going in for smaller families, and added to this is the fact that the young Jews are migrating to other parts of London when they get married The result is that there is a larger population above the age of child bearing in Whitechapel today Mr D Tscherniakoff, secretary of the Jewish Health Organization of Great Britain, says "I think there are three main reasons for the decline First there is the tendency to a lower birth rate among the general population of western Europe Then there is the economic cause Jews are not marrying so early as they used to, owing to financial handicaps Consequently the period for having children is limited Lastly there is the great spread of knowledge of birth control Among the Jews specifically there is also another factor which strengthens these tendencies It is the slackening, among certain sections of Jews, of the strong hold which religion asserted over them, particularly with regard to its view on the sanctity of family life"

Health Education

A 'Handbook of Suggestions on Health Education," prepared for the consideration of teachers and others concerned in the work of public elementary schools, is issued by the board of education on the authority of Sir George Newman, the chief medical officer The physical health and condition of the child are, in the board's view, the basis on which all mental education must necessarily be founded Not only is the physically unfit child likely to be below the average of mental capacity, but the development of the brain and mind is largely influenced and promoted by the muscular activities Accordingly, the purpose of hygiene and physical training is not only to improve the physical condition of children but to aid in the development of their mental powers and in the formation of character Upward of 20 per cent of children in attendance at school are suffering from acute disease needing treatment, and the practice of hygiene is necessary as a defense measure—a means of cure or prevention In a child under 10 or 11, hygiene is to be taught as a rule by habit training The first part of the "Suggestions" consists of subject matter for health practice and talks for young children, classified under various heads, which include cleanliness, clothing, food, fresh air and sunlight, breathing, care of the eyes, ears and teeth, "safety first," and physical exercises and games Cleanliness should be drilled into children till it has become a habit and they can be accustomed to fresh air in the class room, put through a class breathing exercise, and trained in right posture and other matters The second part relates to the instruction of older children, and contains outlines of health lessons for the information and guidance of teachers

A Central Council for Health Education

On the initiative of the Society of Medical Officers of Health, a central council for health education has been constituted to advise and assist local authorities on the education of the people in health matters It is expected that by this means much of the overlapping and waste of effort resulting from the present multiplicity of health organizations will be avoided A systematic national plan for health propaganda is most desirable, as the public health act of 1925 empowers municipalities to engage in health education work, and the innumerable offers of assistance from so many voluntary bodies necessitate a coordination in this respect The council will therefore represent local authorities, education committees, insurance committees, the Society of Medical Officers of Health, and other bodies The friendly societies and approved societies under the national health insurance act will be invited to cooperate in the development of health and education

International Convention on Cancer Research

At the quarterly meeting of the grand council of the British Empire cancer campaign it was announced that an international convention on cancer research was being convened for next July in London The Royal Society of Medicine had placed its headquarters at the disposal of the British Empire cancer campaign for the purposes of the meetings of the convention Sir John Bland-Sutton, past president of the Royal College of Surgeons and vice chairman of the campaign, would be president of the convention The work would be divided into sections on pathology, diagnosis, medical treatment, surgical treatment, radiologic treatment, and public health and statistics Chairmen had been appointed for some of these sections Sir Thomas Horder, with Sir William Willcox as vice chairman, of the diagnosis section, Professor Lazarus-Barlow, pathologic section, Sir Charles Gordon-Watson, surgical treatment section, Prof Sidney Russ, with Dr Robert Knox as vice chairman, radiologic treatment section, and Lieut-Col F E Fremantle, public health and statistics section Invitations have been sent to all parts of the world to those whose names are associated with modern research into the cancer problem, and all the universities and medical schools of the United Kingdom have been invited to send delegates to the convention

Marriages Wrecked by Birth Control

A woman physician, Dr Alice Hutchison, speaking on the psychology of parenthood at a conference of health visitors and nurses, declared that birth control had wrecked a number of marriages, because the maternal urge could not be quenched so easily If they put a difficulty in the way of that urge they would find women harboring animosity against their husbands He might argue that she had agreed to have no more children, but the fact remained that she did not know how strong the urge was Birth control was producing that terrible monstrosity, the only child They might come to speak, not of drink, but of "only-childism" as the greatest curse of the country

A Pole Appointed to First Chair of Anthropology in a British University

Professor Manilowski, who was recently appointed to the chair of anthropology in the University of London, as chief guest at a luncheon given by the Polish Circle expressed his sense of the honor which had been done him in appointing him to the first chair of anthropology which had been founded in any British university The British Empire, though essentially conservative, showed itself aware of vital problems in due time, and it had unostentatiously recognized the importance of a scientific knowledge of what race really meant and differences in culture really implied Anthropologic posts had been instituted in the colonies, and a chair of anthropology had now been founded in the capital of the empire It was a great tribute to the impartial mind of the British that they had chosen a foreigner The fact would encourage him to carry on the work with due devotion to the interests which were involved in sound teaching on interracial relations and to the development of a deeper knowledge of the subject-races of the British Empire

PARIS

(From Our Regular Correspondent)

Jan 25, 1928

A Prize in Literature Won by a Physician

The award of the prix de l'Academie Goncourt, which is offered each year for the best recent novel, has recently been bestowed on Dr Maurice Bedel in recognition of his new novel "Jerome, 60 North Latitude.' The scene of the novel is located in Norway The story describes a love intrigue in which a young foreign scientist sojourning in the region and a lovable maiden of the Northland are the principals It brings out the extremely tolerant attitude with which a betrothal is regarded in Nordic lands, as well as in Japan M Maurice Bedel is not practicing medicine, but since completing his medical studies has been devoting himself to archeology, ethnography and belles-lettres He was, during the war, a member of the army medical corps, with the relative rank of major He received two wounds, and a title of the Legion of Honor was bestowed on him on the field of battle While serving in the Vosges Mountains, with a detachment of *chasseurs-skieurs* he developed a great passion for skiing, and made, in that connection, the acquaintance of a number of Norwegian volunteers After the war, he visited his new friends in their native land, and it is thought that in his novel he has betrayed some of their secrets In the press interviews that he granted after his book was awarded the *grand prix*, he stated that, although the medical profession has become foreign to him, he was of the opinion that he owed to his biologic studies his aptitude in applied psychology and his interest in ethnographic problems, which appeared to have brought success to his novel Other physicians who have abandoned their profession, or who have never practiced it, but who have won names for themselves in contemporary French literature have expressed themselves in a similar manner, to mention only Duhamel, Roland Dorgeles and Paul Voivenel Possibly literature will, in the future, furnish more frequently an outlet for an overcrowded profession, and perhaps the psychologic qualities of our modern novels will be improved by the influx of a foreign strain

Serotherapy in Typhoid

M Weinberg, head of a service at the Institut Pasteur prepared, fifteen years ago, serum with cultures of *Bacillus perfringens* and anaerobes that are associated with it This serum rendered remarkable service during the war in cases of gas gangrene. Weinberg has recently communicated to the Societe de biologie the results of his use of the same serum in cases of typhoid in which *Bacillus perfringens* had been discovered in abundance in the stools of the patients and even in the blood, creating thus an added infection, which renders the prognosis of typhoid much more grave In the two cases reported by Weinberg the use of the serum brought about a rapid defervescence and an improvement in the general condition M Weinberg advocates always searching for anaerobes in the stools of typhoid patients, as they are found frequently, and, when they are present, he recommends the use of the serum, as he is convinced that it will increase greatly the chances of recovery

Accidents Due to Barbital Compounds

Poisonings resulting from barbital compounds, which are being used more and more and which pharmacists dispense to the public without a medical prescription, are becoming frequent, some being due to mischance or to the increasing use of overlarge doses, and others to doses taken with suicidal intent There have been also criminal poisonings M Andre Tardieu, who in collaboration with M Simon Camps made in 1924 a somewhat sensational study of the problem, recently took up the cudgels again in an address before the Societe de therapeutique He makes an insistent demand that these products be added to the list of substances that pharmacists may not dispense to the public without a prescription—that is to say, that they be considered as toxic substances The numerous observations of accidents described by physicians have made known a number of new symptoms of this form of intoxication M Busquet reported a case in which the absorption of 1 5 Gm of di-allyl-barbituric acid by a young psychopath produced a lethargy of three to four days' duration, with an elevation of temperature that gradually reached 39 5 C (103 F) the third day Heretofore, it has been said that death from barbital was attended with an abnormally low temperature M Tardieu and M Maitre have made similar observations—a careful examination of the subjects revealed no other organic cause of the fever Tardieu thinks that this effect is due to the action on the midbrain (the same cerebral region attacked by epidemic encephalitis) of the nitrogenous products of disintegration issuing from the tissues injured by the barbituric intoxication, such as is observed after the experimental ingestion of a solution of sodium urate Tardieu called attention also to various other symptoms produced by barbituric intoxication coma-vigil, acute or subacute psychoses, lethargy with asthenia, ocular disorders, salivation and fever, toxidermia in subjects in a state of hepatic or renal insufficiency, with exanthems resembling those of measles, scarlatina or erysipelas, sometimes in chronic intoxication of long duration, crusts resembling those of tertiary syphilids The resolution presented by M Desesquelle to the effect that all derivatives of malonyl urea be added to the list of toxic substances that may not be dispensed to the public except on a physician's prescription was unanimously adopted by the Societe de therapeutique

The Serodiagnosis of Syphilis in Prostitutes

M Chatellier of Toulouse has presented to the medical society of that city a communication which deals with the practice of requiring prostitutes to be subjected to a serologic test, from time to time, to discover syphilis As long as France maintains the system of supervised prostitution, one cannot take too great precautions At Toulouse, in the Hopital de la Grave, 372 serologic examinations of prostitutes, since Jan 1, 1927, gave 147 positive reactions Of these patients, the vast majority did not present cutaneous or mucous manifestations and there were scarcely twenty cases of primary or secondary syphilis during the year The described measure, in use at Nancy and at Brest, is applied in Toulouse to all prostitutes, the serologic test being repeated every three or four months Accordingly, every new arrival is directed by the Service medical de surveillance to the service of Dr Chatellier or of Professor Andry To speak only of the service for prostitutes, an average of 150 injections of arsphenamine or bismuth are given each month

Deaths

Dr Patein, member of the Academy of Medicine, section of the pharmacologic sciences, has died He contributed numerous articles on organic chemistry and had been chief pharmacist of the Hotel-Dieu in Paris

Dr Dagron, recently deceased, had been the collaborator of Dr Lucas Championniere in his researches on the treatment of limb fractures by massage Whereas the method had been previously practiced by ignorant empirics, he gave it a veritable scientific basis and acquired a great reputation thereby A special service had been created for him in the Hotel-Dieu

Dr Danysz, who has recently died, was laboratory head in the Pasteur Institute He was the creator of a special virus for the destruction of rats The virus was easily obtained in large quantities through cultivation in an infusion of hay, and was used to impregnate bread crusts, which were placed about the grain fields A fatal epidemic was produced among the rats, which spread rapidly The procedure has been applied on a large scale and has been of great service to agriculture Danysz was a native Pole, a compatriot of Madame Curie, and was associated with the first attempts to make a physiologic application of radium after its discovery, but he did not make any remarkable discoveries

ITALY

(From Our Regular Correspondent)

Dec 31, 1927

Congress of Otorhinolaryngology

Under the chairmanship of Professor Brunetti, who succeeded to the office on the death of Professor Gradenigo, the Societa italiana di otorinolaringoiatria held recently in Parma its twenty-third national congress The main topic on the program, "The Physiologic and the Clinical Aspects of the Sense of Smell," was divided into two subtopics Professor Baglioni, of the University of Rome, presented the official paper on the physiologic aspects, and Professor Bilancioni, of the University of Pisa, opened the discussion on the clinical aspects of the subject Baglioni, speaking of the functional examination of the various sensibilities of the nasal mucosa, divided them into general (tactile, thermic and dolorific) and specific (olfactory) Ordinarily, these two forms of sensibility are considered independently of each other, although it is probable that they are—at least, in part—interrelated The functional examination consists of various procedures, among which the most used, at present, are the determination of the value of the threshold (the least perceptible), the determination of the intensity, and the determination of the quality—of olfaction The olfactometer most in use is that of Zwaardemaker The term "olfactie' signifies the stimulus threshold of normal persons for a given odor and is expressed by the length (in centimeters) of an odorous surface According to Baglioni, it would be preferable to make use of an apparatus by which the odorous air, instead of being aspirated by the subject, as is the case with the olfactometer, would be insufflated A similar instrument might serve also as a tactile, chemical or thermic esthesiometer The determination of the threshold of qualitative olfactory values—osphresiometry—is also very important For an exact determination of the qualitative and the quantitative threshold it is necessary to establish first the physiologic olfactory zero, or the normal state of sensitiveness in a nonodorous environment, which is represented by any pure respiratory air

Professor Bilancioni discussed, from the clinical point of view, dysosmia, dysgeusia and similar disturbances Dysosmia manifests itself, according to the speaker, as anosmia, hyperosmia and parosmia, characterized respectively by diminution, augmentation and perversion of the sense of smell Disturbances of the sense of smell may be produced by tumors of the temporal region, wounds, irritating gases (during the war, numerous cases of anosmia resulting from asphyxiating gases were observed), mechanical or respiratory causes, pathologic changes of the nasal mucosa, and anomalies of the nasal mucosa (in albinos, in whom the mucosa is deprived of pigment) Anosmia may develop without any apparent lesions of the nasal fossae, in which case the condition is due to nervous disturbances of peripheral or central origin An important clinical question is as to whether or not anosmia may be cured During the war, the sense of smell impaired by traumatic injuries was frequently restored, but in case of marked deformation or loss of substance restoration of function is impossible Hyperosmia may be universal or partial—that is to say, it may manifest itself with reference to all or only to one or more odors It should not be confounded with oxyosmia, an acute sensitiveness of the olfactory mucosa, which in some persons is a physiologic state Ordinarily, it is a simple functional disturbance, which is related to hysteria or neurasthenia Intense and persistent gustatory and olfactory sensations occur at times in general paralysis, in the paranoid types of dementia praecox, and in the delirium of poisoning The speaker expounded also the modern views on the physiopathology of taste The presentation of the papers was followed by a general discussion Of the sessions of the congress, one was devoted to communications on rhinology, one to papers on pharyngology and laryngology, and a third to communications on otology and various subjects

School Dental Clinics

Professor Cavallaro, of the University of Florence, in a communication to the Congress of Stomatology held in Milan, discussed the school dental clinics recently established in Italy These clinics are in operation at the present time in the principal cities of Italy, their chief purpose being to combat, from early childhood, dental caries Speaking more particularly of the school dental clinic in Florence, of which he is the director, Professor Cavallaro stated that the school population of the city consists of 14,000 children, 1,921 of whom received dental treatment during the school year 1926-1927, there having been a total of 3,697 professional treatments, 1,431 of which were filling operations Personal histories were taken of all the children treated, a careful study of which reveals that in the cases of dental caries there was always a deficiency with respect to the food factor and the vitamin factor in both the offspring and the nurse

Results of the State Examination

As has been previously mentioned, Professor Gentile, the ex-minister of public instruction, introduced a law, two years ago, requiring applicants for licensure to practice the liberal professions to submit to a special examination to demonstrate their qualifications The first application of this law was made in 1925 In that year, 1,118 physicians, 511 pharmacists and a number of other professional men, were accepted, very few applicants being rejected In 1926, the applicants were given more severe tests, with the result that 999 physicians and 645 pharmacists were admitted to professional practice, while a larger percentage were rejected Of the ten university centers established by the minister, Pavia was chosen by the largest number of medicosurgical candidates (312), while Florence was selected by the smallest number The final results of the tests for the current year have not yet been announced

Proposed Changes in Pharmaceutic Studies

The question of reorganizing pharmaceutic studies in Italy is being discussed by the special press The pharmacists demand the institution of a genuine degree in pharmacy in place of the certificate that is at present given to those who complete the university course in pharmacy They ask that the whole course be reorganized according to criteria in keeping with modern demands Professor Filippi, of the University of Perugia, recommends that the course of university study be left at four years as at present but that the fourth year be devoted mainly to pharmacologic technic—to practice work in the pharmacy of a city hospital, which should, for that purpose, be regarded as a branch of the university

The Morbidity and Mortality of Children

In his introductory lecture of the course on the rearing and training of children, Professor Francioni, director of the Clinica Pediatrica in Bologna, called the attention of the assembly to the present demographic conditions in Italy The statistics of the last quinquennium reveal a decline in the birth rate If it were in accordance with the increase in population as established the total number of births would average 1,251,000 whereas the average for the five years was only 1,127,160 The decline is more conspicuous in certain regions (Piedmont and Liguria), and is compensated for, in part, by a high birth rate in other sections of the country (Venetia and southern Italy), where there is a birth rate of from 34 to 39 per thousand of population

According to recent statistics, the annual mortality for young children is as follows

	Age Years	Total No of Deaths	No of Deaths per Thousand Living Births	No of Deaths per Hundred Deaths of All Ages
	0–1	142 034	127 2	21 53
	1–2	44 987	40 2	6 82
	2–3	16 383	14 6	2.48
	3–4	9 523	8 4	1 44
	4–5	6 447	6 6	0 98
Totals	0–5	219 374	197 0	33 25

These figures represent a certain measure of progress as compared with the period immediately preceding the war when the average mortality was 217 4 per thousand living births, during the first five years of life But the mortality and also the morbidity are still too high, Professor Francioni emphasized—especially for the first year of life and it is therefore toward the nurslings above all—that physicians in general and directors of institutions in particular, must direct their attention, in order to compensate by reduced morbidity and mortality for the decline in the birth rate

BERLIN

(From Our Regular Correspondent)

Jan 28, 1928

Drafting of a Prussian Law Pertaining to the Treatment of Patients with Mental Illness

Concerning the tentative draft of a Prussian law dealing with mental disease, a statement has been published setting forth the conditions under which a person may be committed to a '*heil- und pflegeanstalt*," or care-taking institution, which term is to be used in the future in place of '*irrenanstalt* or insane asylum The first thing necessary is evidence of the need of institutional care Such evidence is regarded as furnished if the person must be taken to an institution for cure, treatment or care or if the person constitutes a menace to his environment The latter idea will be expressed somewhat differently in the new law, which will state that those patients must be committed to an institution who, in consequence of their mental disease per se or otherwise, are a menace to their environment from the standpoint of quiet safety and order, or who are in need of supervision, protection, bodily care or medical attendance Weak minded persons will be considered among the class of the insane Only when the aforementioned conditions obtain will detention in a care-taking institution be found "permissible" or be "officially demanded" Permission so to detain a psychopathic subject will be granted on the basis of a petition which must be endorsed by a physician licensed to practice in Germany Such endorsement by a physician must be based on a personal examination of the patient of recent date (not more than two weeks back) The physician's certificate must be presented within four weeks from the date it bears If the patient is committed to a private institution, he must be examined within three days by a health officer or by a physician on the staff of a public care-taking institution The authorities having jurisdiction in the matter must be informed at once of the admission of such a patient In urgent cases, any public care-taking institution will be expected to admit at once mentally ill patients The commitment of a menta ill subject must be officially ordered if the designated conditions, corresponding to the former charge of constituting a public menace, obtain To the commitment must be attached a certificate setting forth the condition of the patient and signed by the health officer having jurisdiction or by the physician of a public care-taking institution In urgent cases, with a view to avoiding threatened dangers, the certificate of any physician licensed to practice in Germany will suffice Under certain circumstances, an adult mentally ill patient may be admitted on the basis of a written petition signed by himself On the other hand, an adult patient or his legal representative may file a demurrer to his detention in an institution For the supervision of such care-taking institutions a visiting commission must be created in Berlin and in every province of Prussia The *"oberprasident'* of the province or his representative shall be the chairman of the visiting commission The other members of the commission shall include an official psychiatrist and a nonmedical person who has had experience in welfare work

Methods of Testing the Quality of Drinking Water

The quantity of chlorine needed to destroy the bacteria in water depends on the amount of organic matter the water contains Hence the demand that a city's water supply be tested three or four times a day Heretofore, tests could be made only in chemical laboratories with the use of utensils designed to analyze large quantities of water Recent experiments carried out by Hahn, Schutz and Pavlides in the Berlin Hygienic Institute have brought about a simplification of the test method, concerning which Professor Schutz has made an announcement before the Berlin Gesellschaft fur offentliche Gesundheitspflege The testing of water can now be carried out by persons without special academic training Hitherto a starch solution has been used for the determination of the chlorine content, but such a solution is not very stable Schutz used a solution of alpha-naphthoflavone, which is much more sensitive than starch, absolutely stable, and gives more uniform results Experiments with samples of water from various water systems of Germany have shown that a chlorine excess of at least 0 25 mg is required to destroy all bacteria within five minutes

During the discussion that followed the presentation of the paper, Professor Friedberger gave an account of experiments that he had performed with rats for the purpose of determining whether chlorination of drinking water has an unfavorable effect on the organism He gave rats water containing four times as much chlorine as is usually employed and found that the rats thrived better than the controls who received ordinary faucet water He concludes, therefore, that the addition of chlorine is certainly not harmful The question was asked whether or not the fact that, during recent years, boilers and heating coils used in connection with central heating systems have rusted out soon could be ascribed to the chlorination of the water This supposition was denied On the west side of Berlin, where the rapid rusting has been observed, the water is not chlorinated No change in the taste was observed on addition of 0 4 mg per liter of water

Alcoholic Patients in Prussian Institutions for Neurotics and the Mentally Ill

In 1925, there were 90,337 beds in the 249 Prussian institutions for neurotics and the mentally ill, as compared with 83,891 beds in 247 institutions in 1924 This denotes an increase of 6,446 beds, or 7 7 per cent The number of patients cared for in 1925 was 143,539 (76,949 males, 66,590 females), or 14 2 per cent (16 9 per cent males, 11 3 per cent females) more than in 1924 In 1925 there were thus about thirty-eight such patients per 10 000 inhabitants, as compared with thirty-three in 1924, thirty in 1923, and twenty-seven in 1913 It is apparent therefore, that the proportion of the prewar period has been exceeded In 1925, the total number of deaths among the patients of these institutions was 7,249 (3,636 males, 3,613 females) The proportion of deaths per thousand patients dropped from 58 1 in 1924 to 50 5 in 1925 Excluding the neurotics, the number of mentally ill subjects treated rose from 106,919 to 119,003, an increase of about 11 per cent The greatest increase is found among the patients treated for alcoholism, the number of which showed an augmentation of about 33 per cent as against the previous year With the exception of the year 1923, each year since the war has shown an increase of patients treated for alcoholism, and the present figures are but slightly lower than those of the prewar period In 1913 there were from eighteen to nineteen such patients, in 1925, there were about seventeen, per hundred thousand of population

The Brain of Lenin

The rites performed by the government of the Russian soviet republic over the remains of the founder of that republic, Lenin, have been extended to an examination to discover to what extent the anatomic structure of Lenin s brain justified the assumption of especially high mental endowment With the aid of Prof O Vogt, director of the Emperor William Institute for Brain Research in Dahlem (near Berlin), a laboratory was established in Moscow, and several physicians were trained, under the guidance of Professor Vogt, in the technic of brain examination For a period of two years the brain of Lenin was subjected to a minute examination The brain was subdivided into 31,000 separate specimens, all of which were conserved in such a manner that any one who, in the future, may wish to make researches on the brain of Lenin will have an opportunity to do so The specimens needed for the present research were stained, and photomicrographs were made of them For purposes of comparison, a number of normal brains from persons who possessed only moderate mental endowment were brought in At the request of the public commissariat of the public health service Professor Vogt gave, Nov 12, 1927, a preliminary report on his observations

"The structure of the third layer of Lenin's brain, consisting of the pyramidal cells, deserves special attention, for these cells were found to be especially well developed The marked development of the pyramidal cells produced, of necessity, an intensification of the general activity of the various divisions of the brain This in itself explains the outstanding nature of Lenin's intellectual life The large number of paths proceeding from the pyramidal cells and thus uniting portions of the brain otherwise widely separated explains, furthermore, the wide range and the multiplicity of ideas that developed in the brain of Lenin, and, particularly, his capacity for quickly getting his bearings when confronted with the most complex situations and problems The abundance of centers in which Lenin's ideas arose, and the manifold paths through which these ideas passed, explain likewise Lenin's ability to comprehend new situations and face conditions as they actually are This multiplicity of ideas, together with the wide range and the rapidity of his powers of conception, produced in Lenin unusual powers of intuition Such organized thinking can be compared with a musical work in which, in a certain unit of time, a large number of notes quickly succeeding one another is produced, whereas the thinking process of the average person may be contrasted with the slow tempo of an ordinary piano selection Lenin s brain activity can be compared, in other words, with a whole wave of sounds, closely interwoven, rapidly tumbling over one another, yet so combined as to produce a mighty harmony All these various aptitudes form in their entirety, the basis of what was universally recognized as a peculiar type of genius Thus the key to a materialistic view of Lenin's genius has been found"

Marriages

LAWRENCE BURTON SHELDON, Baltimore, to Miss Lois Madale Iverson Schier of Evanston, Ill, February 18

CHARLES BARTLETT DEARBORN to Miss Mabel Osborn, both of Mount Sterling, Ill, at Quincy, February 8

IRVINE M FLINN, JR., Wilmington, Del, to Miss Margaret Dashiell of Princess Anne, Md, January 3

RAPHAEL EUSTACE SEMMES, JR, to Miss Mary Alice Graves, both of Memphis, Tenn, Dec 15, 1927

JOHN E WALTER, Waukegan Ill, to Miss Anna Katherine Frahm of Atlanta, Ga, Dec 22, 1927

THEODORE W DAVIS to Miss Edna Earl Tharpe, both of Nashville, Tenn, February 15

Deaths

Valery Havard ⊕ Colonel, U S Army, retired, Fairfield Conn, Medical Department of the University of the City of New York, 1869, entered the Army as an assistant surgeon in 1874 and retired in 1910, veteran of the Spanish-American War, president of the Army Medical School and in charge of the library and museum division of the medical department of the U S Army, 1906-1910, recalled to active duty in 1917 and ordered to Havana to reorganize the medical department of the Cuban army and navy, being relieved in 1923, author of "Manual of Military Hygiene", aged 81, died, Nov 6 1927, at sea, aboard the steamship *Colombo,* bound for Italy, of angina pectoris

Sidney Arthur Twinch ⊕ Newark, N J, Medical Department of Columbia College, New York, 1890, formerly on the staffs of the Hospital and Home for Crippled Children, Home for Incurables and Hospital, Newark City Hospital and St James' Hospital and the Irvington (N J) General Hospital, aged 64, died, February 7, at the California Lutheran Hospital, Los Angeles, following an operation for tumor of the prostate

Paul Yoer Tupper ⊕ St Louis, Hospital College of Medicine, Louisville, 1880, professor emeritus of surgery, Washington University School of Medicine, member of the Southern Surgical Association and the American Association of Anatomists, formerly on the staffs of the Missouri Baptist Sanitarium, the Bethesda Hospital, St Luke's and St John's Hospital, aged 69, died suddenly, February 1, of heart disease

Charles Giffen Beall ⊕ Fort Wayne, Ind, Fort Wayne College of Medicine, 1904, member of the American College of Physicians served during the World War, on the staffs of the Indiana School for Feebleminded Youth, the Irene Byron Sanatorium of Tuberculosis and the Lutheran Hospital, where he died, February 7, of pneumonia, following a cerebral hemorrhage, aged 46

John Bragg Smoot ⊕ Dallas, Texas, Beaumont Hospital Medical College, St Louis, 1888, professor of clinical surgery Baylor University College of Medicine, professor of surgery Southern Methodist University Medical Department, Dallas, 1903-1914, senior surgeon to the Parkland Hospital, aged 59, died, February 2, of coronary disease and arteriosclerosis

Charles Thomas Nolan ⊕ Marietta, Ga, Atlanta Medical College, 1892, formerly secretary of the state board of medical examiners, past president of the Cobb County Medical Society, physician in charge of a sanatorium bearing his name, aged 58, died, January 26, at a hospital in Tampa, Fla, of heart disease

Neil F Graham ⊕ Washington, D C, Western Reserve University School of Medicine, Cleveland, 1862, emeritus professor of principles and practice of surgery, Howard University School of Medicine, Civil War veteran, aged 87, died, February 1, of uremia and prostatic hypertrophy

George Edward Baxter, Jacksonville, Ill, Missouri Medical College, St Louis, 1899 member of the Illinois State Medical Society, on the staffs of the Illinois School for the Deaf and the Illinois School for the Blind, aged 56, died, January 22, of septic endocarditis and septicemia

Stephen H Bennett, Little Valley N Y, University of Michigan Medical School, Ann Arbor, 1908, past president of the Cattaraugus County Medical Society, health officer of Little Valley, aged 56, died, January 1, at the City Hospital, Salamanca, of chronic nephritis

Edwin W Patterson, Washington D C, Medical Department of Columbian University, Washington 1896 served during the World War, superintendent of the Gallinger Municipal Hospital, aged 57, died, Dec 27 1927 at Alexandria, Va, of angina pectoris

Charles W Williams, Cherokee, Ala, University of Nashville (Tenn) Medical Department, 1873 member of the Medical Association of the State of Alabama aged 80, died January 22, at the Colbert County Hospital Sheffield of acute nephritis and hematuria

Anthony J Gannon, Kansas City Mo, College of Physicians and Surgeons, Medical Department Kansas City University, Kansas City Kan, 1899 formerly on the staff of the Kansas City Tuberculosis Sanatorium, Leeds, aged 59 died, January 31, of nephritis

Walter Howard Wells, Coffeyville Kan, Georgetown University School of Medicine, Washington D C 1868 member of the Kansas Medical Society aged 85, died January 31 at the Bell Memorial Hospital, Kansas City of broncho pneumonia

Thomas Horace Miller ⊕ Captain U S Army Fairfield Ohio, Rush Medical College, Chicago, 1893, served during the World War, entered the regular army in 1920 aged 59 was killed, February 15, when the airplane in which he was riding fell

Leon Joseph Roth ⊕ Los Angeles, University of Southern California College of Medicine Los Angeles, 1901 member of the American Urological Association served during the World War, aged 54 died suddenly January 30, of heart disease

Thomas Francis McParlan, New York Bellevue Hospital Medical College New York 1891, member of the Medical Society of the State of New York on the staff of St Francis Hospital, aged 60, died, February 13, of chronic myocarditis

Isaac S Harold, Indianapolis, Physio Medical College of Indiana, Indianapolis, 1889, formerly professor of nervous diseases at his alma mater, aged 75 died February 6 the result of a cerebral hemorrhage suffered a year ago

Early Braxton Turnage, Tucson, Ariz Tulane University of Louisiana School of Medicine New Orleans 1920 member of the Arizona State Medical Association aged 37 died January 15, of accidental carbon monoxide poisoning

Thomas Allen Fitzgerald, Missoula Mont Trinity Medical College, Toronto, Ont, Canada 1888 member of the Medical Association of Montana aged 59 died Dec 24 1927, at St Patrick's Hospital, of subacute nephritis

Frederick William Woeppel, Wahoo Neb, Creighton University School of Medicine, Omaha, 1905 aged 51 died February 1, at the Evangelical Covenant Hospital Omaha of injuries received when struck by an automobile.

James George Grant ⊕ Akron, Ohio Bellevue Hospital Medical College, New York, 1886, formerly on the staff of the Akron City Hospital, aged 66, died, January 29 of cerebral hemorrhage and arteriosclerosis

Frances Cecilia James, Melrose, Mass Woman's Medical College of Pennsylvania, Philadelphia, 1886, aged 72, died January 30, in the New England Hospital for Women and Children, of heart disease and nephritis

Orion Asbury Grantham ⊕ Littleton, Colo, Barnes Medical College, St Louis, 1908, member of the city council aged 46, died, January 24, at Custer, S D, of a skull fracture received in an automobile accident

Daniel Leo Brady, Potosi, Wis, Wisconsin College of Physicians and Surgeons, Milwaukee, 1909, member of the State Medical Society of Wisconsin, aged 42, died, February 13, of cerebral hemorrhage

James G Field ⊕ Captain, U S Navy, retired, Washington, D C, Medical College of Virginia Richmond 1885 aged 65, died, Dec 8, 1927, at the U S Naval Hospital, of bronchopneumonia and tularemia

Parke Woodbury Hewins, Boston, Harvard University Medical School, Boston, 1883, member of the Massachusetts Medical Society, aged 72, died, February 4, at his home in Wellesley, of coronary sclerosis

Ernest Cornish Baynard ⊕ Charleston, S C, Medical College of the State of South Carolina, Charleston, 1909, pro-

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⊕ Indicates Fellow of the American Medical Association fessor of urology, at his alma mater, aged 40, died, February 8, of pneumonia

William Ira Vandeveer, Blue Grass, Iowa, Homeopathic Medical College of Missouri, St Louis, 1893, formerly bank president, aged 68, died, February 16, at the Mercy Hospital, Davenport

Charles W Sawyer, Elizabeth City, N C, University of Maryland School of Medicine, Baltimore, 1885, aged 70, died, Dec 18, 1927, of acute dilatation of the heart and pulmonary edema

Francis W Harper, Irvona, Pa, College of Physicians and Surgeons, Baltimore, 1896, member of the Medical Society of the State of Pennsylvania, aged 62, died, January 3, of pneumonia

Napoleon B Crawford, Eureka, Ill, Bellevue Hospital Medical College, New York, 1864 member of the Illinois State Medical Society, aged 88, died, January 29, of acute bronchitis

Harriet Elmira Reeves, Melrose Mass, Boston University School of Medicine, 1892 member of the American Psychiatric Association, aged 69, died, February 13, of acute otitis media

Whiteman F Taylor, Ashland, Kan, Kentucky School of Medicine, Louisville, 1881, member of the Kansas Medical Society, aged 70, died, February 10, of angina pectoris

Robert W Rea ⊕ Plattsburg Mo, Missouri Medical College, St Louis, 1885, aged 67, died January 23, at the Missouri Methodist Hospital, St Joseph, of pneumonia

Adonijah William Parrish, Kirksville, Mo (licensed, Missouri, 1883), member of the Missouri State Medical Association, aged 75, died, February 2, of arteriosclerosis

James Algie, Toronto Ont Canada University of Toronto Faculty of Medicine, 1878 aged 69, died, January 16, at St Petersburg, Fla, of potassium cyanide poisoning

Charles W Kirtland, Jackson, Mich University of Michigan Homeopathic Medical School, Ann Arbor, 1891, aged 60, died, January 31, of valvular heart disease

Isaac N Curd, Richmond, Va Medical College of Virginia, Richmond, 1860, Confederate veteran, aged 92, died, February 2, of acute dilatation of the heart

Kenneth Rayner Glennan, Washington D C Maryland Medical College, Baltimore, 1912 aged 43, died, February 6, at the Providence Hospital, of pneumonia

Charles W Cady, Mabel, Minn, Bennett College of Eclectic Medicine and Surgery Chicago, 1877 aged 81, died, January 24, of hypertrophy of the prostate

Isaac Loper Hardenbrook, Richmond Hill, N Y, Medical Department of the University of the City of New York, 1883, aged 75 died, Dec 31, 1927, of pneumonia

William L Brock, Sparta, Tenn (licensed, Tennessee, 1889) member of the Tennessee State Medical Association aged 74 died, January 27, of influenza

John Evans Gernand, Rossville, Ill, University of Michigan Medical School, Ann Arbor, 1894 also a druggist, aged 64, died, February 5, of heart disease

Max H Hazay ⊕ New York, Columbia University College of Physicians and Surgeons, New York, 1903, aged 48, died, February 14, of chronic myocarditis

Anthony A Dorszynski, Milwaukee, Wisconsin College of Physicians and Surgeons, Milwaukee, 1902, aged 51, died January 1, of bronchopneumonia

Joseph B Waynick, South Bend, Ind State University Iowa College of Medicine, Iowa City, 1882, aged 71, died, recently, of chronic rheumatism

Robert Scott Mahan, Havana Kan, University of Louisville (Ky) School of Medicine, 1898, aged 73, died, Nov 18, 1927, of angina pectoris

John I Fowlkes, Hamlet, N C Atlanta College of Physicians and Surgeons, 1903, aged 54, died, January 2, of arteriosclerosis

James A Bundy, Kankakee, Ill, College of Physicians and Surgeons, Keokuk, 1885, aged 70, died, February 3, of paralysis

Wesley Bibb Kerr, Dudley, Mo, Chattanooga (Tenn) Medical College, 1892, aged 66, died, January 30 of heart disease

Joseph Douglas Morris, Seattle, Chicago Medical College, 1863, aged 94, died, January 22, of lobar pneumonia

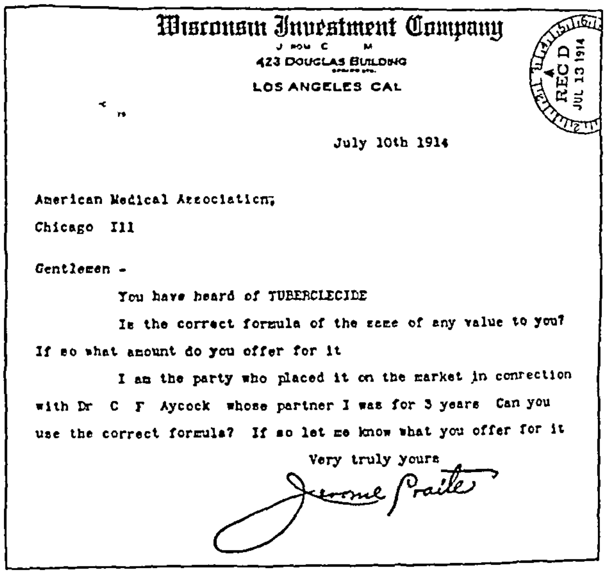
Bureau of Investigation

THE TUBERCLECIDE FRAUD

Charles F Aycock, "Consumption Cure" Faker Debarred from the Mails

Charles F Aycock has for years sold a fraudulent "cure" for consumption called "Tuberclecide" This nostrum was first exposed nearly 17 years ago in The Journal, May 13, 1911 At that time Tuberclecide sold at $15 for a two ounce bottle When examined in the A M A Chemical Laboratory, the stuff was found to be essentially a solution of creosote, or guaiacol, in olive oil On June 1, 1912, The Journal again published a story on the Tuberclecide fraud, giving the history of Aycock and showing the various schemes in which he had been engaged At that time Aycock was operating from New Mexico but the local officials went after him so hard that he found it expedient to leave that state and go to California

While in California, he was prosecuted by the federal officials under the National Food and Drugs Act, *on the charge that the claim that Tuberclecide* was an effective remedy for tuberculosis was false and fraudulent In defending himself, Aycock got three men, who were legally entitled to call themselves physicians, to testify in his favor—Drs O M Justice, G A Scrogg and M S Iseman During the trial the United States attorney, who was prosecuting Aycock, took exception to some of the judge's remarks, because he held that the prosecution was not being fairly treated The case was a court and not a jury trial and the judge dismissed the case in favor of the quack This was eleven years ago



Wisconsin Investment Company
J ROM C M
423 DOUGLAS BUILDING
LOS ANGELES CAL

REC'D JUL 13 1914

July 10th 1914

American Medical Association,
Chicago Ill

Gentlemen -

You have heard of TUBERCLECIDE

Is the correct formula of the same of any value to you? If so what amount do you offer for it

I am the party who placed it on the market in connection with Dr C F Aycock whose partner I was for 3 years Can you use the correct formula? If so let me know what you offer for it

Very truly yours
Jerome Craite

Photographic reproduction of a letter received in 1914 from Aycock s one time partner — Jerome Craite The American Medical Association did not entertain Mr Craite s offer to sell the Tuberclecide formula

Emboldened by his apparent immunity, Aycock has continued to defraud the tuberculous public *all* these years, *until* finally the postal authorities have proceeded against him for fraudulent use of the United States mails About January 1, 1928, a fraud order was issued against the Aycock Medical Institute, Aycock Medicine Company, Aycock Medical Company and Charles F Aycock There is reason to believe, however, from letters that have been received in The Journal office since the issuance of the fraud order, that Aycock is evading the order by doing business under the name 'Tuberclecide Institute," 402 Delta Building, Los Angeles, California

As it is many years since The Journal has published the essential facts regarding Aycock and his 'cure," a restatement is desirable The following excerpts *from the memo* randum of the Solicitor of the Post Office Department to the Postmaster-General, recommending the issuance of a fraud order, while detailing certain new facts also bring out most of the facts that were given in THE JOURNAL's articles (reprinted in the pamphlet "Consumption Cures" and also in "Nostrums and Quackery," Vol I) To quote from the Solicitor s memorandum

"The business under consideration is the sale of an alleged treatment for tuberculosis through the mails This treatment consists of a preparation known as 'Tuberclecide,' put up in a box or glass jar in the form of pearls, or round gelatine capsules About 100 of these pearls are included in each one month treatment A liquid tonic preparation is included with each treatment This preparation is called 'Metablitone' The Metablitone is also sold separate and apart from the treatment, the price asked for each bottle containing thirty days' treatment of Metablitone being $2 50 The present price asked for the complete tuberculosis treatment, consisting of Tuberclecide and Metablitone, is $25 Formerly $20 was asked for this treatment [At the time of THE JOURNAL's exposure $15 was the price of the fraud —ED]

In order to have a thorough understanding of the enterprise involved here, it is necessary to set forth some facts as disclosed by the evidence respecting Charles F Aycock's personal history, particularly that portion of his history leading up to and following his alleged 'discovery' or 'invention' of his treatment for tuberculosis

'According to his testimony at the hearing, Aycock had 'read medicine' with a country or small-town doctor in Indian territory for a short time Later he had compounded and sold through drug stores an alleged catarrh cure While holding the office of County Treasurer of Boone County, Arkansas, he was convicted of embezzlement of county funds and sentenced to the Arkansas State Penitentiary at Little Rock for five years It appears that he bound and gagged himself in an effort to cover this embezzlement He claims that shortly after being committed to the penitentiary, he was assigned to the penitentiary hospital, where he was employed as assistant to the physician in charge for about eleven or twelve months

"In his booklet, Aycock refers to his having been the assistant to the physician in charge of the State Hospital at Little Rock At no point in his literature does he disclose that he was attached to this penitentiary hospital as a prisoner under five years' sentence for embezzlement He asserts that during this time he contracted pulmonary tuberculosis, had a number of hemorrhages, and was released from the penitentiary owing to his physical condition The evidence is not clear as to whether he was pardoned or received a commutation of sentence The evidence indicates that a petition for his release was carried over the county by his then wife, traveling on foot with a young child, and that after his release, he deserted this wife and child, the wife having since remarried He claims that after his release he 'practiced medicine' in Oklahoma with an elderly doctor, no license to practice being required there at that time

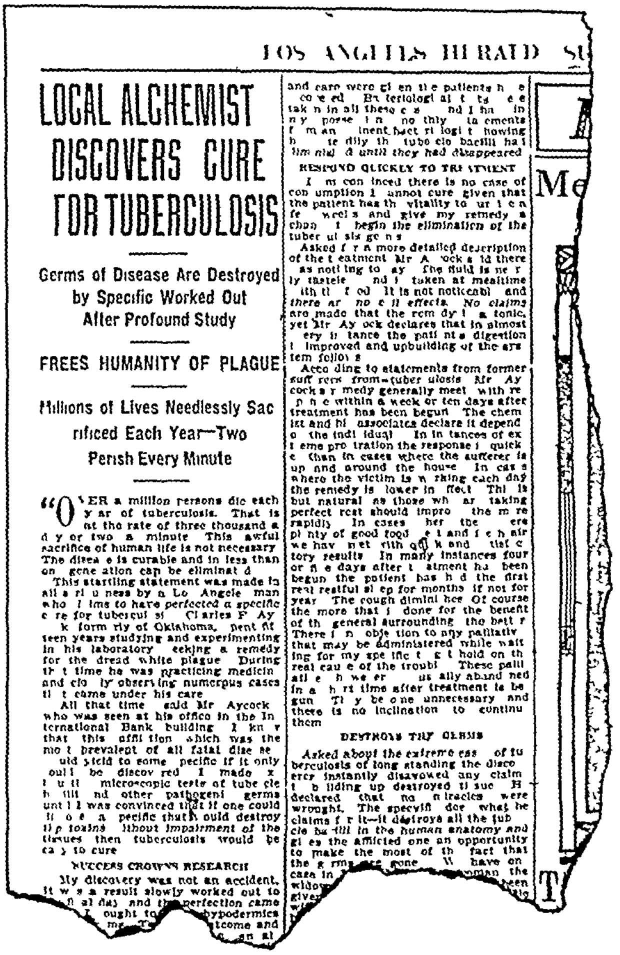
'He stated that for about two years after his release he suffered from pulmonary tuberculosis and during this time lived for short periods in Wyoming, Arizona and California, at times working in a restaurant, as a driver of an express wagon, and as a grader of lumber'

The memorandum then goes on to state that Aycock claims to have taken various 'patent medicines" for tuberculosis and finally evolved his own "treatment," which he states cured him To continue

"From the evidence it appears that the first trade name, other than this personal name, adopted for the sale of the Tuberclecide treatment was the Tuberclecide Company This concern was incorporated on October 3, 1910, the incorporators being Charles F Aycock Jerome Craite and Frank M Wolf The capitalization was $45 000 In October 1911 Messrs Craite and Wolf withdrew from the company and Mr Aycock continued the business until September 17 1913 at which time he entered into an agreement with Messrs Dick Ferris and C R Harris of Los Angeles, by the terms of which they became managers of the company and each of them was to receive $150 per month for his services This arrangement continued until January 15, 1914, when Mr Aycock agreed to dispose of his interest in the company to Messrs Harris and Ferris for the sum of $100,000 payment to be made in monthly installments consisting of 1/10 of the net profits arising from the operation of the business The formula was placed in escrow in a bank and was to be delivered to Messrs Harris and Ferris when $100,000 had been paid over to Aycock The arrangement provided that Aycock was to furnish Harris and Ferris such quantities of Tuberclecide as their business might require pending final payment During the time that Messrs Harris and Ferris conducted the business, Dr M S Iseman, whose endorsement of the Tuberclecide treatment is carried in the Aycock literature, was employed by the promoters in connection with the business

The evidence indicates that after $20,000 had been paid under the contract above mentioned, Mr Aycock terminated his arrangement with Messrs Harris and Ferris upon becoming convinced that they were using a 'substitute' for Tuberclecide"

When the Post-Office inspectors first investigated this fraud they called on Dr Iseman (who has since died) and learned from him that he was not at that time using Tuberclecide, because he had "invented a treatment of his own, which he considered better!" After Iseman's death Aycock and another person continued the sale of Tuberclecide under the name "Golden State Medical Company," a name which was later changed to "Aycock Medical Institute,' and later still to "Aycock Medical Company' The memorandum continues


LOS ANGELES HERALD

LOCAL ALCHEMIST DISCOVERS CURE FOR TUBERCULOSIS

Germs of Disease Are Destroyed by Specific Worked Out After Profound Study

FREES HUMANITY OF PLAGUE

Millions of Lives Needlessly Sacrificed Each Year—Two Perish Every Minute

Reproduction of part of a two column advertisement of Tuberclecide that was run some years ago The advertisement was so set as to appear as reading matter

"The evidence in this case shows, and I so find, that the statements to the effect that Aycock took advantage of what the world's most eminent physicians had previously discovered regarding the action of various medicines upon tuberculosis, and successfully eliminated the harmful effects, are false and fraudulent The evidence before me shows that the ingredients of Aycock s alleged treatment have long been known to the medical profession and have long since been proven as worthless as cures for tuberculosis The evidence shows that the taking of the Aycock treatment has a deleterious effect upon the stomachs of patients Interviews had by one of the inspectors who investigated this case with persons whose testimonials appear in the Aycock booklet and circular matter, and with their relatives, show that the use of the Aycock treatment by these persons, who at one time furnished testimonials to Aycock stating that they had been cured, had to be discontinued on account of its disorganizing effect upon the digestive functions"

The Post-Office inspectors, when investigating the case, naturally looked into some of the testimonials, which are the chief advertising asset of all medical fakers They found, as might be expected that some of the patients quoted as having been cured of tuberculosis were not tuberculous at all, while in some cases in which the testimonial givers had actually had tuberculosis, the victims were found to be dead

After Tuberclecide was analyzed by the chemists of the American Medical Association, Aycock changed the form in which his nostrum was put up For some time the stuff has been sold in the form of gelatine capsules, or 'pearls ' The Solicitor's memorandum continues

"Two chemists, each of whom have had a number of years' experience in analyzing drug products testified at the hearing on behalf of the Government Their testimony was to the effect that three analyses of the product, 'Tuberclecide' had been made which showed that the preparation consisted of ⅓ guaiacol and ⅔ fatty oil One of these chemists made a special test for gold but found none Since the hearing further tests of the product Tuberclecide,' purchased by the inspector in this case through test correspondence, have been made for gold and none found"

The nostrum was tested for gold because of claims made by quack Aycock to the effect that this ingredient was part of the cure' Gold was not found by the government chemists but this fact did not bother Aycock He put on the stand his own 'consulting chemist —Henry C Fuller of Washington, D C This is the same Mr Fuller who a few years ago published "The Story of Drugs which so volubly whitewashed the *patent medicine' industry* The Solicitor s memorandum, although not mentioning Fuller by name, states

'There was produced at the hearing on behalf of the respondents, a consulting chemist, who testified that he had been handed a glass jar of gelatine pearls labeled 'Tuberclecide' by one of the counsel for the respondents on the evening before his appearance as a witness, and had been directed to test the preparation for gold that such test had been made and he had found present gold tri-bromide This test was not made on samples purchased through the mails by the post office inspectors On cross-examination, Mr Aycock admitted that there was a difference in the physical appearance of the pearls examined by his chemist and those placed in evidence in connection with the Government's case

'On cross-examination, Mr Aycock stated that his 'Metablitone formula was not a secret When asked for the ingredients, he stated that he could not name all of them from memory, but that he thought it had twelve ingredients He stated that it contained cinchona, nux vomica quassia bitter orange peel, wild cherry and sumbul On being prompted he admitted that it also contained sherry wine, white pine, hardhack and columba When asked whether it contained snake venom, he indicated that he did not care to state, but later in cross-examination he stated that he puts rattlesnake venom either in his Metablitone or in his Tuberclecide

"Throughout the hearing he maintained that there had been no variation from his original formulas for his tuberculosis treatment, consisting of Tuberclecide and Metablitone, since *he first invented them and cured himself by their use* However on cross-examination he stated that he thought he added his Metablitone to his treatment before he was cured The evidence shows that he at one time used 'Aycock's Lung and Kidney Plaster' in connection with his tuberculosis treatment and at other times used cough medicines called 'Cough-No-More' and Sulphardine

'From his own testimony, it is shown that his Metablitone formula has been materially changed at various times He claimed to manufacture this at times in the basement of his home and at other times to have various pharmacists put it up, and still other times Parke, Davis and Company put it up The two samples of the preparation in evidence, as part of the Government s case, showed a difference in color and in the amount of sediment therein Aycock attempted to explain this by stating that one w other By his testimony he discl what he or the pharmacists or man process of manufacture"

At the hearing Aycock had no behalf The government had two well-qualified and of considerable ment of tuberculosis Aycock filed a monials of lay users of his treatmen on the basis of long experience, reject because as scientific evidence, they a also attempted to use in his own behal federal judge in the Food and Drugs Act ago The Solicitor for the Post Office De pointed out that that decision in no way license to Aycock to purvey his nostrum, Tube the end of time regardless of the truth or falsity made for it Summing up all the evidence, the declared that the evidence showed that Aycock and hi named concern were engaged in a scheme for obt money through the mails by means of false and fraudul pretenses and recommended that a fraud order be issued. It was issued

Correspondence

STRABISMUS IN CONGENITAL SYPHILIS

To the Editor —In THE JOURNAL, February 4, Dr Lloyd B Dickey speaks of strabismus as a symptom of congenital syphilis References to this are by no means new Edmond Fournier (Recherche et diagnostic de l heredo syphilis tardive, Paris Masson & Cie 1907, p 74) states that his father, Prof Alfred Fournier, was the first to call attention to it, after finding it nineteen times in fifty cases of congenital syphilis Mauriac (Syphilis tertiaire et hereditaire, Paris J B Baillière et fils, 1890, p 1133) also refers to it as an important sign Leredde (La syphilis hereditaire et la famille syphilitique, Paris A Maloine et fils, 1925, p 37) places it among the more frequent stigmas of congenital syphilis

B BARKER BEESON, M D Chicago

OLIVER WENDELL HOLMES IN HALL OF FAME

To the Editor —In the January issue of the *North American Review* there is a list of the names admitted to the Hall of Fame, and the names of those who are not yet honored with a bust

Among the latter is that of Oliver Wendell Holmes

The American Association for Science is taking care of Agassiz, the Quakers are going to honor Whittier, the telegraphers are remembering Morse, and the Masonic order is looking after Paul Jones

May I suggest that the medical profession provide a suitable bust in memory of Holmes, than whom there is none more worthy It can be said of him as Dr Samuel Johnson said of Oliver Goldsmith Nihil erat quod non tetigit, nihil quod tetigit non ornavit

JOHN FERGUSON M D, Toronto

"SPONTANEOUS FRACTURE OF THE POSTERIOR CLINOIDS"

To the Editor —I have noted with interest the article on "Spontaneous Fracture of the Posterior Clinoids" (THE JOURNAL February 11 p 457) The illustration demonstrates the posterior and anterior clinoid processes of the sella turcica accurately, thereby showing excellent x-ray technic, frequently, as the result of poor technic, distortions of the pituitary fossa are observed which on further study prove to be a normal sella turcica I have been interested in the study of this region from the roentgenologic point of view for twelve years and have noted many false readings of what appeared to be normal pituitary fossae The roentgenogram shown in this article impresses me and I feel fairly certain that the distortion of the posterior clinoid process of this patient is a hyperostosis adjoining the posterior clinoid rather than a fracture as stated Hyperostosis is not an unusual observation in irritations due to pathologic changes of the region The posterior clinoid and sella appear intact in the illustration, well outlined and normal in size and shape, but small, as the author emphasizes

The thinning and expansion of the pituitary fossa is well known from pressure of pituitary tumors and intracranial tension If one would consider the anatomy and thickness of the region, it seems unlikely that a spontaneous fracture of the sella turcica could occur from a sudden swelling of the pituitary gland I believe this to be a case of hyperos punt of the posterior clinoid process due to pathologic ible pe in the vicinity and not a fracture debility ly sis

stance quot

C W PERKINS ation of the conditions

CHATFIELD C RECTAL PROS, M D New York

To the Editor —I at is the instru proper evacuation columns of THE 24 1927 issue but as your r COLLINS

GIRDLESTONE SPLINT

to have ANSWER—The ma in the ordinary course of events, the affect ance, which JOURNAL might not be open to me exactly the ase It is ges have unwittingly done me an error I wish the assage is the courtesy of a little space for the necessary ion

ough it was made known to me just about a year ago in a hospital in Boston, that I had been some months iously the indirect subject of an article by Dr Philip in of Chicago, only this morning did I have the opportunity of seeing what the article contained The reprint omes from THE JOURNAL, Nov 13, 1926, p 1644 under the caption 'The Girdlestone Splint for Bilateral Deltoid Paralysis

I devised the splint myself, while at the Wingfield Orthopaedic Hospital, Headington, England, and while under the care of so eminent a British surgeon as Mr Girdlestone It was decided to call the apparatus the Chatfield Girdlestone bilateral deltoid splint, but through some typographic error or misinformation, the article does not bear this title, nor the splint its proper name

I may add that the first splint of its kind is still in my possession, it is the one pictured in the article

CHARLES M CHATFIELD, Reno, Nev

[The letter of Mr Chatfield was referred to Dr Philip Lewin, who writes]

'When I visited Dr Girdlestone at Oxford, England in 1925, he introduced me to Mr Chatfield, who was a patient in his hospital at the time He told me that Mr Chatfield was a Rhodes scholar and was stricken with infantile paralysis Nothing was said concerning the inventor of the splint and in the correspondence which passed between Girdlestone and myself no word was mentioned about Mr Chatfield I therefore took it for granted that Dr Girdlestone invented the splint and had it made in his brace shop"

STONE CUTTERS AND GRANITE CUTTERS

To the Editor —I wish to endorse the communication of Dr C E Perry (THE JOURNAL, Dec 24, 1927, p 2211) I think it very unfortunate that the classification "stone cutters' is used I have lived and worked in the marble district of Vermont for fifteen years and only rarely find tuberculosis in a marble cutter It is quite as apt to appear in office workers or in the families of the cutters as it is in the cutters themselves Dr Perry has already pointed out that granite cutters frequently switch to marble cutting My belief is that marble dust is not harmful and it is unfortunate that the occupation should be classed with granite cutting, which is quite another story

EDWARD J ROGERS, M D, Pittsford, Vt
Superintendent and Medical Director,
Vermont Sanatorium for Incipient
Tuberculosis

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed Every letter must contain the writer's name and address, but these will be omitted on request

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CAUSES OF PAIN IN LEFT HYPOCHONDRIUM

To the Editor —I will appreciate it if you can suggest some diagnosis and treatments for the following case A man aged 34, complains of pain over the left side of the abdomen running from the left costal border down to the left pelvic region apparently over the descending colon The pain is made worse by working and disappears almost entirely after a rest Pain also is noticed over the chest, especially over the left side Physical examination is negative Roentgen ray examination of the big colon is negative The chest is normal Can it be possible that parasites are responsible for the trouble? The patient is pale

J Y R, M D, Neb

ANSWER —There are many causes for pain in the left hypochondrium as described Parasites, if present, can be detected in the stool It is questionable, however, whether they are the cause of pain Even though roentgen-ray examination may have been with negative results at first, subsequent examination might reveal a carcinoma of the splenic flexure or of the descending colon The stools should also be examined for blood Other conditions that may cause pain in this region are reflex spasm of the splenic colon from chronic appendicitis or cholecystitis with or without stones, spastic colitis, lesions of the left kidney, as perinephritis or unilateral interstitial nephritis, perisplenitis, under which condition a large spleen may be found, or adhesions elsewhere between the viscera Occasionally an incomplete left inguinal hernia or rarely a hernia in Petit's triangle may cause leftsided abdominal pain Referred pain may arise from pressure or other irritation of the last dorsal or first lumbar nerves Finally in view of the pain being relieved by rest, one must think of some referred abdominal pain from a cardiac lesion

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DISEASES OF THE ARCTIC REGION

To the Editor —I have a friend and patient who is soon to depart on an arctic expedition He asked me to prepare a medical and surgical outfit for him to take along It is not contemplated to take a physician with him Will you kindly advise me to what diseases they will be prone? Are there any statistics as to accidents and diseases on previous arctic expeditions? Do you think they will be taking undue risk going without a physician? There will be eight in the crew and three more in the party One of them is thoroughly familiar with first aid work Any literature that you can tell me about and any advice you can give me will be greatly appreciated

WALTER F STILLGER M D, Hicksville N Y

ANSWER —There are practically no diseases met in the arctic which are unusual Scurvy will not appear during the course of one season Nevertheless, MacMillan sees that his companions eat a few ounces of raw meat each week—caribou seal or walrus—and meat raw or not overcooked is the remedy Otherwise one must be prepared to meet illness as elsewhere Digestive disturbances are not common, but laxatives and some opium preparation for diarrhea are in demand at times Salicylate is useful after strains, exposure and chilling, which may result in neuritis or rheumatism

There is a moderate demand for minor surgery In the expedition itself the usual cuts, bruises, sprains and possible gunshot wounds will require attention Sore feet and hands are common Mosquitoes are indescribably bad and adequate veils are of great value Smoked or colored glasses fitting closely to the eyes—preferably in two grades of density—are a necessity as well as eye-drops for snow blindness These may be any preparation recommended by an ophthalmologist

As to risk, one must take the chance he would elsewhere deprived of medical aid MacMillan has recently wintered twice without a physician One would frequently have desirable, but was not necessary In his four year took a physician Last year on his expedition he had a physician who did an emergency appendectomy and delivered a renal calculus It is of primary importance to have some one who can at least use a scalpel fearlessly and use surgical sutures, for the most frequent condition found is a low grade phlegmonous, partially anaerobic infection of the fingers and hands often extending up the arms, coming from scratches from walrus fish and seal, especially the latter These require free drainage

Furthermore, demands for aid come mostly from natives and not from members of the expedition The natives have frequently been years without medical attention, and it devolves on such expeditions to give aid Infections, old unset fractures, gunshot wounds and tooth extractions are the most common Plaster of paris is best taken in bulk, and bandages made with gauze as required

Statistics are all favorable for a short trip—six months or less—with the reservation that any emergency may arise

MacMillan has made seven trips north one for four years two for fifteen months, and four returning in the fall without the loss of or serious injury to a man—broken ribs and sprains not counting Peary lost two men—one lost altogether and one drowned (perhaps killed by Eskimos) but always had a physician, notably Dr Cook

Careful examination of the medical records of all arctic expeditions does not indicate any unusual hazard at sea or ashore Much depends on leadership and good sense, and on the personnel of the expedition If these are sound, there should be no undue hazard

The following references are of expeditions in which a medical record was kept This is usually distributed throughout the book as part of the narrative and there is no literature dealing solely with this aspect

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Answer —The Anglo-French Drug Company, which markets 'Pancrepatine A F D," has not requested an examination of the preparation by the Council on Pharmacy and Chemistry Information in regard to it other than that which is contained in the advertising does not appear to be available "Pancrepatine A F D" is stated to be "a combination of a Special Extract of the Pancreas and Hepatic Extract " It is claimed that the oral administration of the preparation results in 'Reduction of Glycemia" and 'reduction and sometimes total disappearance of glycosuria '

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Answer —Since the settlement of Australia, in 1788, smallpox has been brought to the shores of that continent on numerous occasions—182 from 1850 to 1908 and sixty-one from 1909 to 1923 The close lookout kept against this disease at quarantine prevented its spread except on rel[illegible] few occasions—a score or more from 1850 to 1908 a[illegible] times from 1909 to 1923 In the nine important e[illegible] during the first period there were 486 cases and 1[illegible] There was only one important epidemic during t[illegible] period, that in New South Wales with 2 400 cases [illegible] deaths The widespread and prolonged duration [illegible] epidemic were due to the mildness of the type of the [illegible] which hindered rapid diagnosis and isolation, and du[illegible] from the advice given in favor of vaccination and the public demand for it

The chief defense against smallpox, the carrying out of required vaccination, has varied in different parts of Australia and from time to time in the same part but in general Australia is to be regarded as unprotected, since the only requirement carried out in any of the states has been that of vaccinating infants The other defenses have been distance from foreign infected localities, quarantine inspection, distance between settlements in the continent itself (the density of population in Australia is 2 per square mile, as against 35 in the United States and 700 in England), rapid diagnosis and isolation of such cases as occurred and the vaccination of contacts The disease has prevailed chiefly in those districts where vaccination is not required

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INCOMPLETE MASCULINE DEVELOPMENT

To the Editor --A boy aged 10 years who is 3 inches over the normal height and who weighs 120 pounds (54 Kg) has a fat large head fine soft hair a fine delicate skin narrow shoulders broad hips and graceful tapering limbs The hands are of average size the feet are large the testes are undescended and the penis is infantile He plays normal boy s games and is a good boxer but rather likes to help with housework. He runs to the overgrown feminine type and is not eunuchoid He has had thyroid and pituitary feeding There are no results on sexual development. What can be done to develop masculine characteristics?

M D, New York.

Answer —The bodily configuration described suggests the condition that is spoken of as an endocrine disorder concerning which little is definitely known The administration of endocrine preparations has, as a rule little effect and there is no particular remedy that can be advised It is assumed that the examinations have been made to exclude gross lesions in the pituitary region—roentgen-ray studies, perimetric measurements, and disturbances in sugar tolerance The principal indications are the training of the boy to healthy activities and the avoidance of teaching him to regard himself as inferior or incompetent He is still young and there may be only a retardation of development, but should he never acquire masculine characteristics he can still achieve a useful and happy life

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To the Editor —Please advise me as to the prolonged use of parathyroid hormone (Lilly s parathyroid serum) in parathyroid insufficiency? Are there any bad effects? Can the dose be lessened or does it need to be increased? Please omit my name and address

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Answer —The status of parathyroid hormone in the treatment of such conditions as postoperative tetany, spasmophilia, sprue, nephritis, whooping cough and lead poisoning is as yet unsettled, partly because the preparation of a stable, physiologically standardized extract containing the active principle of the parathyroid gland is a matter of recent date The principal physiologic action of this hormone seems to be definitely related to calcium and phosphorus metabolism It has been repeatedly observed as a powerful mobilizer of the body calcium in animal experiments

The dose of this hormone and the duration of its administration are dependent on the type of insufficiency existing In postoperative tetany a daily constant dose, somewhere around 18 units of parathyroid extract-Collip is given over a few days until the symptoms subside In spasmophilia it is given over longer periods in smaller doses Overdosage effects which may result in death, have been produced consistently in both normal and parathyroidectomized dogs When successive doses of hormone are given to animals, there results a very viscous blood with a decreased volume O H Petty did not find serious symptoms of poisoning even with a marked elevation of blood calcium As to the effect of the hormo[illegible] the heart and circulation, slowing of the heart rate [illegible] ed arrhythmias, premature beats, and low blood pres[illegible] been [illegible] Nausea, vomiting and excess [illegible]

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ANSWER—Experience indicates that roentgen ray therapy following operations for ovarian papillomas gives good definite results even in instances of incomplete removal If a few periods of irradiation do not furnish a satisfactory result, continuation of the radiotherapy is probably useless Deep roentgen-ray therapy always involves a certain amount of danger to the general constitution, and in susceptible persons may even produce a condition of general debility known as roentgen-ray cachexia In the instance quoted there seems to be no indication for a repetition of the roentgen-ray treatments

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To the Editor —What is the instrument referred to for performing massage to insure proper evacuation of the seminal vesicles on page 2212 in the Dec 24 1927 issue of THE JOURNAL?

COLLINS H JOHNSTON M D Grand Rapids, Mich

ANSWER—The instrument referred to is a club shaped contrivance which may be secured at any medical instrument house It is known as the instrument for rectal prostatic massage The clubshaped end of the instrument well lubricated is introduced into the rectum and by moving it up and down and exerting pressure on the handle, the prostate and seminal vesicles are emptied of their contents It is important to lubricate, previous to the introduction of the instrument the entire anal region in order to prevent inversion of hair or cuticle into the rectum

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INSTRUMENTAL OR MANUAL PROSTATE MASSAGE

To the Editor —In Queries and Minor Notes (THE JOURNAL Dec 24 1927 p 2212 and other issues) in answer to a question concerning the treatment of gonorrhea you advise prostatic massage with a massage instrument Your exact statement is *Rectal massage should always be performed with a massage instrument to insure proper evacuation of the seminal vesicles*

I wish to register a protest against such general advice taken as authoritative no doubt by many medical men lacking experience in the procedure Prostatic massage despite its universality as a therapeutic measure is not entirely devoid of danger as has been pointed out by Harman (THE JOURNAL Oct 14 1922 p 1328) He says Instrumental massage of the prostate and seminal vesicles is not widely favored The more inaccessible parts of these structures may be reached with a metal or hard rubber masseur the use of which is however open to the objection that the manipulation and pressure are not guided by the sense of touch In discussing this article Dr Bransford Lewis makes the statement There is no place for instrumental massage Abraham Wolbarst (Gonococcal Infection in the Male St Louis C V Mosby Company 1927 p 173) urges digital massage with the greatest care avoiding massage in a mechanical form Other books on the subject including Keyes under the technic of massage make no mention of instrumental massage

Prostatic massage is an art and any medical man having experience in the instruction of students in this procedure will realize that proficiency is gained only by oft repeated practice In prostatic massage the size shape contour and consistency of the gland and the vesicles are the determining factors in judging the amount of pressure and the points at which to apply this pressure I cannot conceive of this being accomplished with a metal instrument Rough massage may cause hemorrhage syncope and epididymitis even *if done digitally and instrumental massage certainly has a greater tendency*

In fully 90 per cent of the cases relaxation can be gained by proper technic in the massage and the vesicles reached as well as the prostate if this cannot be accomplished the method of Pomeroy (THE JOURNAL June 19 1927 p 1897) may be utilized

After a more or less lengthy and abundant experience in a fairly large clinic I am firmly convinced that digital massage of the prostate is the only safe and thorough method and that instrumental massage is absolutely contraindicated as a routine method

CHARLES H GARVIN M D Cleveland

Assistant Surgeon to the Dispensary Genito-Urinary Surgery
Outpatient Service of Western Reserve University School
of Medicine and of Lakeside Hospital

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALASKA Juneau March 6 Sec Dr Harry C DeVighne Juneau

COLORADO Denver April 3 Sec, Dr Philip Work 324 Metropolitan Bldg Denver

CONNECTICUT Hartford March 13 14 Sec Reg Bd Dr Robert L Rowley 79 Elm St Hartford Homeo Bd New Haven March 13 Sec Dr Edwin C M Hall, 82 Grand Ave New Haven

DISTRICT OF COLUMBIA Washington April 10 Sec, Dr Edgar P Copeland Suite 110 1801 Eye St Washington

HAWAII Honolulu April 9 12 Sec, Dr James A Morgan, Room 48 Young Bldg Honolulu

IDAHO Boise April 3 Commissioner of Law Enforcement, Hon E F Lukens Boise

ILLINOIS Chicago April 10 12 Supt of Reg Mr V C Michels Springfield

LOUISIANA New Orleans May 1 Sec Homeo Bd Dr F H Hardenstein 830 Canal St New Orleans

MAINE Portland March 13 14 Sec, Dr Adam P Leighton Jr, 192 State St Portland

MASSACHUSETTS Boston March 13 15 Sec, Dr Frank M Vaughan, 144 State House Boston

MINNESOTA Minneapolis April 17 19 Sec Reg Bd Dr A J Comstock 524 Lowry Bldg St Paul Basic Science examinations April 3 Sec Basic Science Bd Dr E T Bell U of Minnesota Minneapolis

MONTANA Helena April 3 5 Sec, Dr S A Cooney Power Bldg Helena

NEW HAMPSHIRE Concord March 8 Sec Dr Charles Duncan, Concord

NEW MEXICO Santa Fe, April 9 10 Sec Dr Wm E Joyner, Roswell

OKLAHOMA Oklahoma City March 13 14 Sec Dr J M Byrum, Shawnee

PORTO RICO San Juan March 6 Sec, Dr Diego A Biascoechea, 3 Allen St San Juan

RHODE ISLAND Providence, April 5 6 Sec, Dr B U Richards State House Providence

WISCONSIN Madison, March 17 Sec Basic Science Bd Prof M F Guyer U of Wisconsin

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Michigan October Examination

Dr Guy L Connor, secretary of the Michigan Board of Registration in Medicine, reports the written examination held at Lansing, Oct 11 13, 1927 The examination covered 14 subjects and included 100 questions An average of 75 per cent was required to pass Of the 19 candidates examined, 18 passed and 1 failed The following colleges were represented

PASSED

College	Year Grad	Per Cent
Howard University School of Medicine	(1927)	81 8
Loyola University School of Medicine	(1927)	78 8
Northwestern University Medical School	(1927)	81 8
Rush Medical College	(1927) 83 6	85 5*
University of Buffalo School of Medicine	(1925)	84 5
Meharry Medical College	(1927)	79 9
University of Alberta Faculty of Medicine	(1925)	81 9
University of Toronto Faculty of Med (1922) 77 90 2 (1926) 84 3 85 5 (1927) 84 2 84 3 86 87 5	(1925)	83
University of Western Ontario Medical School	(1927)	84 9

FAILED

College	Year Grad	Per Cent
Meharry Medical College	(1926)	71 2

This candidate will receive his M D degree on the completion of one year s internship in a hospital

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South Dakota July Examination

Dr H R Kenaston director of the Division of Medical Licensure South Dakota Board of Medical Examiners, reports the oral, written and practical examination held at Huron, July 19-20, 1927 The examination covered 15 subjects and included 100 questions An average of 75 per cent was required to pass Eight candidates were examined, all of whom passed Five candidates were licensed by reciprocity The following colleges were represented

PASSED

College	Year Grad	Per
Rush Medical College	(1901)	
University of Illinois College of Medicine	(1926)	90 3
State University of Iowa College of Medicine	(1910)	
St Louis University School of Medicine	(1924)	
Washington University School of Medicine	(1926)	
Creighton University School of Medicine	(1904)	
Omaha Medical College	(1900)	

LICENSED BY RECIPROCITY

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In the light of our present knowledge it can only be suggested that prolonged use of parathyroid hormone may give rise to harmful results A reduction in the amount administered would be more logical than an increase, especially when given over a long period

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INSTRUMENTAL OR MANUAL PROSTATE MASSAGE

To the Editor —In Queries and Minor Notes (The Journal Dec 24 1927 p 2212 and other issues) in answer to a question concerning the treatment of gonorrhea you advise prostatic massage with a massage instrument Your exact statement is Rectal massage should always be performed with a massage instrument to insure proper evacuation of the seminal vesicles

I wish to register a protest against such general advice taken as authoritative no doubt by many medical men lacking experience in the procedure Prostatic massage despite its universality as a therapeutic measure is not entirely devoid of danger as has been pointed out by Farman (The Journal Oct 14 1922 p 1328) He says Instrumental massage of the prostate and seminal vesicles is not widely favored The more inaccessible parts of these structures may be reached with a metal or hard rubber masseur the use of which is however open to the objection that the manipulation and pressure are not guided by the sense of touch In discussing this article Dr Bransford Lewis makes the statement There is no place for instrumental massage Abraham Wolbarst (Gonococcal Infection in the Male St Louis C V Mosby Company 1927 p 173) urges digital massage with the greatest care avoiding massage in a mechanical form Other books on the subject including Keyes under the technic of massage make no mention of instrumental massage

Prostatic massage is an art and any medical man having experience in the instruction of students in this procedure will realize that proficiency is gained only by oft repeated practice In prostatic massage the size shape contour and consistency of the gland and the vesicles are the determining factors in judging the amount of pressure and the points at which to apply this pressure I cannot conceive of this being accomplished with a metal instrument Rough massage may cause hemorrhage syncope and epididymitis even if done digitally and instrumental massage certainly has a greater tendency

In fully 90 per cent of the cases relaxation can be gained by proper technic in the massage and the vesicles reached as well as the prostate if this cannot be accomplished the method of Pomeroy (The Journal June 19 1927 p 1897) may be utilized

After a more or less lengthy and abundant experience in a fairly large clinic I am firmly convinced that digital massage of the prostate is the only safe and thorough method and that instrumental massage is absolutely contraindicated as a routine method

Charles H Garvin M D Cleveland
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Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

Alaska Juneau March 6 Sec Dr Harry C De Vighne Juneau

Colorado Denver April 3 Sec Dr Philip Work 324 Metropolitan Bldg Denver

Connecticut Hartford March 13 14 Sec. Reg Bd Dr Robert L Rowley 79 Elm St Hartford Homeo Bd New Haven March 13 Sec, Dr Edwin C M Hall 82 Grand Ave New Haven

District of Columbia Washington April 10 Sec Dr Edgar P Copeland Suite 110 1801 Eye St Washington

Hawaii Honolulu April 9 12 Sec Dr James A Morgan Room 48 Young Bldg Honolulu

Idaho Boise April 3 Commissioner of Law Enforcement Hon F E Lukens Boise

Illinois Chicago April 10 12 Supt of Reg Mr V C Michels Springfield

Louisiana New Orleans May 1 Sec Homeo Bd Dr F H Hardenstein 830 Canal St New Orleans

Maine Portland March 13 14 Sec Dr Adam P Leighton, Jr 192 State St Portland

Massachusetts Boston, March 13 15 Sec Dr Frank M Vaughan 144 State House Boston

Minnesota Minneapolis April 17 19 Sec Reg Bd Dr A E Comstock 524 Lowry Bldg St Paul Basic Science examinations April 3 Sec Basic Science Bd Dr E T Bell U of Minnesota Minneapolis

Montana Helena April 3 5 Sec Dr S A Cooney Power Bldg Helena

New Hampshire Concord March 8 Sec Dr Charles Duncan Concord

New Mexico Santa Fe April 9 10 Sec Dr Wm T Joyner Roswell

Oklahoma Oklahoma City March 13 14 Sec Dr J M Byrum, Shawnee

Porto Rico San Juan March 6 Sec Dr Diego A Biascoechea 3 Allen St San Juan

Rhode Island Providence April 5 6 Sec Dr B U Richards State House Providence

Wisconsin Madison March 17 Sec Basic Science Bd Prof M F Guyer U of Wisconsin

Michigan October Examination

Dr Guy L Connor, secretary of the Michigan Board of Registration in Medicine, reports the written examination held at Lansing, Oct 11-13, 1927 The examination covered 14 subjects and included 100 questions An average of 75 per cent was required to pass Of the 19 candidates examined, 18 passed and 1 failed The following colleges were represented

PASSED

College	Year Grad	Per Cent
Howard University School of Medicine	(1927)	81 8
Loyola University School of Medicine	(1927)	78 8*
Northwestern University Medical School	(1927)	84 8
Rush Medical College	(1927)	83 6 * 85 5*
University of Buffalo School of Medicine	(1925)	84 5
Meharry Medical College	(1927)	79 9
University of Alberta Faculty of Medicine	(1925)	81 9
University of Toronto Faculty of Med (1922) 77 90 2 (1926) 84 3 85 5 (1927) 84 2 84 3 86 87 5	(1925)	83
University of Western Ontario Medical School	(1927)	84 9

FAILED

College	Year Grad	Per Cent
Meharry Medical College	(1926)	71 2

* This candidate will receive his M D degree on the completion of one year s internship in a hospital

South Dakota July Examination

Dr H R Kenaston, director of the Division of Medical Licensure South Dakota Board of Medical Examiners, reports the oral, written and practical examination held at Huron, July 19-20, 1927 The examination covered 15 subjects and included 100 questions An average of 75 per cent was required to pass Eight candidates were examined, all of whom passed Five candidates were licensed by reciprocity The following colleges were represented

PASSED

College	Year Grad	Per Cent
Rush Medical College	(1901)	91 3
University of Illinois College of Medicine	(1926)	90 3 92 1
State University of Iowa College of Medicine	(1910)	90 5
St Louis University School of Medicine	(1924)	91 3
Washington University School of Medicine	(1926)	91 7
Creighton University School of Medicine	(1908)	86 7
Omaha Medical College	(1900)	88 7

LICENSED BY RECIPROCITY

College	Year Grad	Reciprocity with
Northwestern University Medical School	(1927)	Minnesota
State Univ of Iowa College of Homeopathic Med	(1901)	N Dakota
University of Minnesota Medical School (1926 2)	(1927)	Minnesota

Book Notices

AMERICAN MEDICINE AND THE PEOPLE'S HEALTH. An Outline with Statistical Data on the Organization of Medicine in the United States with Special Reference to the Adjustment of Medical Service to Social and Economic Change. By Harry H. Moore, Public Health Economist, United States Public Health Service. With an introduction by the Committee of Five of the Washington Conference of the Economic Factors Affecting the Organization of Medicine. Cloth. Price, $5. Pp. 647, with illustrations. New York: D. Appleton & Company, 1927.

The topic that most concerns economists, sociologists and physicians today is the increasing cost of medical service and the inadequacy of its provision to men in general. In this volume Mr. Harry H. Moore, himself a public health economist, claims to have set forth without bias or prejudice in organized, logical form the chief facts now available in the present rapidly changing situation. He disavows any intention at propaganda for compulsory health insurance or any particular system of state medicine. Nevertheless, the book seems to constitute a startling arraignment of the practice of medicine as carried on in the United States today.

The vitality and magnitude of this problem may perhaps best be comprehended when it is realized that there are more than 1,000,000 people engaged in medical practice in the United States, of whom less than 150,000 are physicians. The remainder are not all quacks nor are they practicing medicine as such, although many of them do infringe frequently on the borders of medical practice. The list includes technical assistants to doctors, drug dealers, dentists and their assistants, all sorts of nurses and midwives, hospital and clinic superintendents and attendants, and the personnel of health departments. There are approximately 2,000,000 persons in the United States constantly disabled on account of illness, and of these about 600,000 are in hospitals. It is important at this point to call attention to the innumerable "approximates" and "abouts" that are presented in these figures. It is realized, as Mr. Moore emphasizes, that the factor of greatest importance at present is to secure actual knowledge of the conditions as they are.

A critical reader of Mr. Moore's views may be impressed with the fact that he is already committed to certain solutions of the problems of medical practice. Certainly, he believes that medical practice is not now "organized" to serve the public efficiently, and that the majority of physicians are not practicing scientific medicine. He is definitely inclined to the view that the individualistic system of the practice of medicine must give way to some highly organized system. He is committed to the view that government organization of medicine is the solution of the problem. He may disavow this as he does in his introduction, but he cannot discount the manner of presentation of his material, which leads inevitably to that conclusion. The vast majority of physicians, and indeed Mr. Moore also, recognize the importance of maintaining a personal relationship between physician and patient. Physicians who have studied the economic situation of the general practitioner are convinced that the general practitioner, if he is to survive, must become a practitioner of preventive medicine. On the other hand as an individual he can hardly compete in the practice of preventive medicine with free services given by the state and by philanthropies.

One solution that has been suggested is the provision of more and greater endowments for the organization of special institutions to serve various portions of the community. Today the word "free" is the most overworked word in the American language. "Free air," "free water," "free parking space" and "free crank case service" are perhaps the most widely advertised items. Mr. Ralph L. Harding, editor of the *Guide Post* has said that the sign "Eyes Examined Free" has probably ruined more eyes that heeded it than ever were benefited. The sign "Consultation Free" has led many of the unsuspecting public into the hands of incompetent quacks. Free service is never as competent as qualified service for which a person pays. Mr. Moore insists that the duties of the state in medicine have already gone far beyond preventive medicine, that medicine is a proper field for state control, and that there are practically no limitations to what the state may do in the field of medicine on demand.

Approximately one half of the book is devoted to appendixes containing information of the greatest importance on the cost of disease, health insurance, governmental activities, pay and part-pay clinical service, fee-splitting and many other subjects. Even the selection of these items has been apparently planned with a view to casting great discredit on the practice of medicine as it exists today. The author seems to have selected his material largely with a view to revolution rather than controlled evolution of medical progress. The last appendix, entitled "Is Medicine Scientific?" is an article by one T. Swan Harding, who, like Mr. Moore, is not a physician. This article, published first in a periodical called *American Medicine*, is an unbalanced irrational assault on modern medical practice that should never have been published anywhere. Its inclusion in this book is perhaps another indictment of Mr. Moore's judgment.

The economist who is responsible for the volume is acting as director of a group of economists, sociologists, physicians and others interested in health problems, which is planning a five year study of the entire problem of medical service. Possibly Mr. Moore is not committed to a definite program for the evolution of medical practice. Certainly, as the director of a survey, he should not be.

GRUNDRISS DER KLINISCHEN THERAPIE INNERER KRANKHEITEN. Von Prof. Dr. Georg Klemperer, Direktor der IV. medizinischen Universitäts-Klinik in Berlin. Third edition. Paper. Price, 6 marks. Pp. 308. Berlin: Urban & Schwarzenberg, 1927.

This practical exposition of treatment of the more important medical diseases is intended to serve as a companion book to the author's "Clinical Diagnosis." A course on therapeutics similar to the one sketched here would be most desirable for senior medical students in this country, most of whom, in deference to present tendencies in medical education, suffer from being inadequately prepared for the treatment of their patients.

SURGICAL DISEASES OF THE GALL BLADDER, LIVER AND PANCREAS AND THEIR TREATMENT. By Moses Behrend, A.M., M.D., F.A.C.S., Attending Surgeon to the Jewish and Mount Sinai and Northern Liberties Hospitals. Cloth. Price, $4 net. Pp. 278, with illustrations. Philadelphia: F. A. Davis Company, 1927.

Experimental physiology has done more in the last five years to advance the surgical frontier than any other one factor. The newer concepts of gallbladder physiology take equal rank with the discovery of the value of iodine in the preoperative treatment of exophthalmic goiter. It is altogether fitting, therefore, to remark that today's monograph on the bile tracts should contain much that would not be found in one written ten years ago; in particular, one would look for a detailed discussion of the relationship between the early clinical phenomena and what is now known of gallbladder function. Concepts of pathologic conditions of the gallbladder have undergone relatively little change, with the exception, perhaps, that in the early stages of inflammatory disease there may be no gross manifestations. The anatomy of the bile tracts with the common anomalous relationships of ducts and vessels has for many years been well known and frequently discussed. The present volume is more than anything else an anatomic presentation. Approximately the first half is taken up with illustrations of the embryology and the normal and aberrant anatomy of the bile tracts. There is a chapter on the physiology of the liver and pancreas and one on the pathology of the gallbladder, liver and pancreas. Chapters on diagnosis and treatment of cholecystitis, and on anesthesia, cholemia, the liver and the pancreas follow. The chapter on symptomatology is inadequate and not altogether logical. The author at once launches into a discussion of stone, colic and chronic jaundice. He mentions dyspepsia but fails to evaluate it by discussing the early diagnosis of cholecystic disease, which should naturally precede the discussion of advanced pathologic changes. An abdominal differential diagnosis is given which aims at differentiating colic from other acute abdominal crises. The technic of cholecystography is briefly detailed. Its value and bearing in the various stages of the disease, as well as the mechanism of the technic, are not discussed. There is a satisfactory chapter on operative technic, but the illustrations in this chapter are poor The chief criticism of this monograph is that it is not abreast of much of the excellent contemporary literature on the surgery of the bile tracts

A Handbook of Ophthalmology By Humphrey Neame F R C S, Ophthalmic Surgeon University College Hospital and F A Williamson Noble F R C S Assistant Ophthalmic Surgeon St Mary s Hospital Cloth Price $4 Pp 312 with 194 illustrations New York William Wood & Company 1927

Here is another treatise on ophthalmology for the undergraduate student and general practitioner following mainly the form employed in Fuchs-Duane First comes examination of the eye and then refraction, followed by chapters on diseases of the various parts a chapter on operations, a short consideration of ophthalmic signs in general medicine, eleven pages on therapeutics and several appendixes Among the chapters that deserve more or less honorable mention are those on the cornea the retina, the optic nerve and extraocular muscles the last presented in a somewhat unusual form, but particularly intelligible Glaucoma is not sufficiently emphasized to drive home its dangers and frequency, although there is an excellent table of differential diagnosis between that and iritis Since the book is intended for the student and the general practitioner, the lack of detail of removal of simple foreign bodies is a serious error, as is the wealth of detail describing the removal of cataract Among etiologic factors of ocular disease, focal infection is properly emphasized, but, in ludicrous contrast, rheumatism' is still included among the factors The use of the term 'K P ' parenthetically apologized for as keratic precipitates,' instead of the proper nomenclature of 'posterior precipitates' is all too frequent There are some views expressed in regard to dacryostenosis in children and in adults that cannot be subscribed to Why are styes still supposed to be due to 'general debility, constipation and errors of refraction' instead of recognized frankly as the infectious processes that they really are? On the whole the book is good the printing is good although the binding is not, and the illustrations of external eye diseases are excellent

Fisiología fisiopatología y clínica de las glándulas de secreción interna (Traducido del catalán) Por Leandro Cervera Paper Price 4 Ptas Pp 162 Barcelona Arnau de Vilanova 1927

This is the first of a series of monographs The physiology physiologic pathology and clinical entities associated with each organ of internal secretion are stated The book is filled with the names of those who contributed in placing our knowledge of the endocrine glands on a scientific basis

Actinotherapy for General Practitioners By H G Falkner L R C S I L R C P I L M Actino Therapeutist to the London Teachers Association Cloth Price $3 Pp 152 with 36 illustrations New York William Wood & Company 1927

The present widespread interest in phototherapy finds its response in numerous volumes on this subject Unfortunately, Falkner s volume, written, as he states in his preface at the request of many friends, adds neither to the broad presentation of the subject nor to the careful working out of some of its doubtful phases, containing much jumbled information There is the usual lengthy description of all kinds of proprietary lamps, instead of a clear cut presentation of principles and types of ultraviolet ray generators Radiant heat apparatus is mixed in with tungsten and mercury vapor lamps It is misleading information to state that hyperpiesis cases which resist all ordinary medicinal treatment invariably respond to ultraviolet ray, or that dysmenorrhea 'can be greatly benefited, if not cured, by ultraviolet radiation,' adding that, if diathermy is given, the positive pole should be attached to an electrode consisting of a metal plate under which towels soaked in saline solution are placed so as to insure a deep effect, while the negative electrode is to be attached to a Schittenhelm couch One of the fundamentals of the high frequency current is that there is no negative and positive pole The enumeration of conditions in which actinotherapy is indicated seems much too far-fetched One statement in the volume, however deserves hearty endorsement that is, that "no treatment should be given in the home with any make of lamp unless under expert medical supervision and with a skilled attendant present"

Books Received

Books received are acknowledged in this column and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender Selections will be made for more extensive review in the interests of our readers and as space permits Books listed in this department are not available for lending Any information concerning them will be supplied on request

Bedside Diagnosis By American Authors Edited by George Blumer M D David P Smith Clinical Professor of Medicine Yale University School of Medicine Three Volumes and General Index Cloth Price $30 per set Pp 2820, with 890 illustrations Philadelphia W B Saunders Company 1928

Another American contribution of great scope and power to systematic literature

Neoplastic Diseases A Treatise on Tumors By James Ewing A M M D Sc D Professor of Pathology at Cornell University Medical College New York City Third edition Cloth Price $14 net Pp 1127 with 546 illustrations Philadelphia W B Saunders Company 1928

New edition of one of the best available reference books on tumors

An Introduction to Medical Protozoology with Chapters on the Spirochætes and on Laboratory Methods By Robert Knowles B A M R C S L R C P Lt Col Indian Medical Service Cloth Price Rs 25/ Pp 887 with illustrations Calcutta Thacker, Spink & Company 1928

Lectures on the study of the larger parasites that afflict mankind

Percival s Medical Ethics Edited by Chauncey D Leake Associate Professor of Pharmacology University of Wisconsin Cloth Price $3 Pp 291 with illustrations Baltimore Williams & Wilkins Company 1927

The story of the code which gave the basis for the American Medical Association Principles of Medical Ethics"

An Approach to the Psychology of Religion By J Cyril Flower M A Ph D, Upton Lecturer in Psychology of Religion Manchester College Oxford Cloth Price $3 50 Pp 248 New York Harcourt Brace & Company Inc 1927

Excellent essays with special reference to evangelism George Fox and similar subjects

A Study of Orthoglycaemic Glycosuria with Particular Reference to Its Hereditability By Urban Hjarne Translated by Carl Westman Paper Pp 149 with illustrations Stockholm P A Norstedt & Soner 1927

Monograph on sugar in the blood and urine and its significance

Troubles We Don t Talk About By J F Montague M D F A C S Cloth Price $2 Pp 248 with 12 illustrations Philadelphia J B Lippincott Company 1927

What the layman ought to know about hemorrhoids

Mental Health of the Child By Douglas Armour Thom M D Harvard Health Talks 16 Cloth Price $1 Pp 46 Cambridge Harvard University Press 1928

A good essay reprinted in convenient form

Singing Sands By Jesse V Gilbert M D Cloth Price $2 net Pp 146 with illustrations Boston Christopher Publishing House, 1928

A Southwestern physician in a cowboy hat bursts into rhyme

Mr Fortune Please By H C Bailey Cloth Price $2 Pp 238 New York E P Dutton & Company 1928

More adventures of the best current medical detective

Handbuch der pathogenen Mikroorganismen Herausgegeben von W Kolle R Kraus und P Uhlenhuth Lieferung 13 Band VII Allgemeines uber Spirochaten Von Prof Dr G Sobernheim und Dr W Lowenthal Syphilisspirochate Von Prof Dr G Sobernheim Immunitat bei Syphilis Von Prof Dr C Bruck Die experimentellen Grundlagen der Lehre von der Syphilisimmunitat Von Dr R Prigge Serumdiagnose der Syphilis Von Prof Dr K Laubenheimer Frambosie Von Dr G Baermann Third edition Paper Price 34 marks Pp 382 with 32 illustrations Jena Gustav Fischer 1927

Handbuch der normalen und pathologischen Physiologie mit Berucksichtigung der experimentellen Pharmakologie Herausgegeben von A Bethe G v Bergmann G Embden und A Ellinger Band IV 2 Halfte Fortpflanzung Entwicklung und Wachstum Teil 2 Metaplasie und Geschwulstbildung Von B Fischer Wasels und F Kuster Paper Price 51 marks Pp 1195 1811 with 44 illustrations Berlin Julius Springer, 1927

MOSQUITO SURVEYS A Handbook for Anti Malarial and Anti Mosquito Field Workers By Malcolm E MacGregor Entomologist Wellcome Field Laboratory, Wisley Surrey England Cloth Price $5 50 Pp 282 with 59 illustrations New York William Wood & Company 1928

THE ART OF ANESTHESIA By Paluel J Flagg M D Anæsthetist to St Vincent s Hospital Fifth Avenue and Flower Hospitals New York City Fourth edition Cloth Price $5 Pp 384, with 155 illustrations Philadelphia J B Lippincott Company 1928

UEBER DIE KATALYTISCHEN WIRKUNGEN DER LEBENDIGEN SUBSTANZ Arbeiten aus dem Kaiser Wilhelm Institut fur Biologie Berlin Dahlem Von Otto Warburg Paper Price 36 marks Pp 528 with 83 illustrations Berlin Julius Springer 1928

Medicolegal

Justified Refusal to Have Part of Finger Amputated

(Everitt v Haldeman Julius Pub Co (Kan) 257 Pac R 939)

The Supreme Court of Kansas, in affirming a judgment which approved an award made by an arbitrator under the workmen's compensation law, says that the plaintiff while *in the employ of the defendant sustained an accidental injury* by which he lost a part of one of his fingers The arbitrator found that the defendant offered the plaintiff an operation for the removal of the second joint of the injured finger, the defendant to pay all necessary expenses in connection with the operation, but that the plaintiff refused to submit to such operation The arbitrator found further that the operation would be a minor one with very slight danger to the life or health of the plaintiff and was a proper operation, but that the plaintiff's refusal to submit to it was not unreasonable because it would dispossess him of a member of his body and all benefit that he derived therefrom and because the operation would not restore him to his former condition The finding of the arbitrator concerning the reasonableness of the refusal of the plaintiff to submit to the operation was fully sustained by the evidence

Under the workmen s compensation law the supreme court cannot say that it is unreasonable for an employee who by accident has had part of one of his fingers torn off to refuse to submit to an operation for the removal of more of his finger, although the operation would probably result in overcoming part of the disability caused by the injury to the finger Whether the refusal to submit to an operation is unreasonable or not is a question of fact to be determined by the trier of facts

An award of $2 610 under the workmen's compensation law, as compensation to an injured employee for the loss of a part of a finger, is not excessive when as a consequence of the injury, an attempt to use his hand causes pain in his hand and arm

Cerebral Hemorrhage of Workman with Arteriosclerosis

(Texas Employers Ins Ass n McGrady et al (Texas)
296 S W R 920)

The Court of Civil Appeals of Texas says that the question was presented in this case as to whether a hemorrhage of the brain suffered by a workman was an accidental injury if caused alone by heavy manual labor It has been held that the rupture of a blood vessel caused by an act of violent physical exertion is an accidental injury within the meaning of the workmen's compensation act If the rupture, commonly called a "hemorrhage," results solely from hardened arteries or high blood pressure or any physical ailment, it cannot be classed as an accident but is a disease However, the mere fact that the person in whom the rupture occurred has at the time diseased arteries or high blood pressure is not conclusive proof that the injury is a result of a disease and not accidental The weakened state of the arteries caused by the physical disorder, or the abnormal strain caused by the high blood pressure, is merely a condition on which some exciting or producing cause may operate If a rupture results from lifting a heavy weight by a healthy person, it is because the exertion is too great for one in that physical condition The legal principle is the same if the rupture results from lifting a lighter weight by a person of less strength, whether the reduced strength is the result of natural or disease conditions Whatever the physical condition of the individual may be, if it is such that it requires some physical exertion or strain to cause the rupture the injury may properly be classed as an accidental one If lifting 100 pounds may cause an accidental injury to one person, on what ground can it be said that a similar injury to another person by lifting 50 pounds, or 25 pounds, is not also accidental? If that is not true, then where shall we draw the line between the different physical conditions, or what shall we adopt as a standard of weight in determining whether the injury is the result of an accident or of a disease? It would not be satisfactory or logical to fix that standard at what it would require to injure one in normal health, for even persons in normal health vary in physical strength Nor should it be said that an injury from overexertion by one in a debilitated condition is not an accident simply because it required less violent exercise to produce the injury We cannot fix any standard of condition nor can we fix any standard of sufficiency of cause operating on the condition The legal principle is the same, whether the injury results *from lifting weights, as a can of paint, or by some other form of physical* overexertion The jury was instructed in this case that

> By the term "personal injury is meant damage or harm to the physical structure of the body and such diseases as naturally result therefrom If L E McGrady was afflicted with hardening of the arteries prior to the 2d day of January 1923 and while engaged in heavy manual labor he suffered a hemorrhage of the brain which proximately caused his death and which hemorrhage of the brain was due to excessive physical exertion of his labor of if such physical exertion was a contributing cause of the hemorrhage of the brain then such injury would be an injury sustained in the course of his employment

Complaint was made of the charge on the ground that it stated an incorrect definition of a compensable injury under the workmen's compensation act but this court does not think that the instruction was subject to the objection made

Total Disability of Physician from Chronic Nephritis

(Fitzgerald Globe Indemnity Co (Calif) 258 Pac R 458)

The District Court of Appeal of California, third district, in affirming a judgment in favor of the plaintiff, says that in 1916 the defendant issued to him an accident and health insurance policy which provided that if disease caused the insured to be "totally and continuously unable to transact all business duties,' the company would pay a prescribed indemnity for the entire period thereof The plaintiff was a physician and surgeon who owned two farms which he had planted to walnuts and which were operated by men employed by him The complaint alleged that he had been totally and continuously unable to transact any business duties since Feb 9, 1918, the disability being caused by chronic nephritis, that the defendant had paid the indemnity provided to be paid by the policy for total disability up to Jan 19 1922, but had refused to pay any indemnity thereafter The judgment affirmed was for the amount of unpaid indemnity specified in the policy for total disability caused by disease

In the early part of 1918 the plaintiff, acting on the advice of his physicians, entirely abandoned his practice of medicine and surgery He testified, and the court found, that at the same time he gave up the management and supervision of his walnut groves and farming operations But he frequently drove his automobile on short trips and a few times on longer ones He drove it down town nearly every day and made purchases of household supplies He executed certain contracts For a time he received and examined monthly reports of the farming expenses He maintained deposits in two banks and drew checks thereon from time to time He paid taxes, insurance, and interest on money that he had borrowed He performed other similar acts The defendant contended that these acts constituted the transaction of "business duties" within the meaning of that term as used in the policy of insurance However, while those acts were business transactions, they did not constitute engaging in business in the sense in which that term is ordinarily used The mere fact that a professional man may make contracts in relation to his property, keep a bank account and pay his taxes, insurance and other debts does not necessarily show that he is engaging in a business outside his profession The physician, the lawyer, the teacher, the preacher and the priest do all these things without causing any one to think that their occupations are dual But to concede that the plaintiff's acts amounted to the transaction of business duties within the meaning of the policy would not require a reversal of the judgment The ultimate fact to be determined was not what the plaintiff actually did in the way of business duties but what, in the exercise of common care and prudence, he was reasonably able to do Proof of what he did was merely evidence tending to show his ability to do, just as the opinions of the physicians who testified were evidence tending to show that his ability was or was not total This expert opinion evidence alone, in view of the nature of the plaintiff's affliction, was sufficient to create a substantial conflict and the finding of the trial court thereon was conclusive

The fact that the insured may do some work or transact some business duties during the time for which he claims indemnity for total disability or even the fact that he may be physically able to do so is not conclusive evidence that his disability is not total if reasonable care and prudence require that he desist Both the evidence and the law supported the conclusion of the trial court that the plaintiff was totally and continuously unable to transact the business duties of either occupation in which he was engaged at the commencement of his illness His physicians advised him to desist therefrom, and they testified at the trial that he was totally and continuously unable to transact his business duties without increasing bodily waste and hastening the progress of the disease that caused the disability It cannot be said as a matter of law that the occasional transactions in which he engaged constituted the performance of the substantial and material acts of his business or occupation in the usual and customary way, or conclusive proof that, in the exercise of reasonable care and prudence, he was able to transact such business duties

Services Rendered on Order Signed by Foreman

(Hodgen v Bitely et al (Mich) 215 N W R 37)

The Supreme Court of Michigan, in adopting as its own the opinion of the trial court, says that that court tried this cause without a jury and filed an opinion in which it was stated that Earl Bitely was injured, Feb 19 1924 while in the employ of a company that was insured in pursuance of the workmens compensation law Bitely was treated by the plaintiff and had a leg amputated nine days after the accident The plaintiff was paid for his services rendered at that time, the payment being by the company through its insurer In October, 1924, Bitely came to the plaintiff again for treatment, and the plaintiff sent him back to his employer for authority to the plaintiff to treat him further Bitely returned with a document addressed to the plaintiff which said Please render to Mr Earl Bitely the necessary medical services as provided for in the workmen's compensation act, for injury received on February 19, 1924, while in our employ Nature of injury, amputation of leg Name of employer Higman Package Company, by J Fisher" Thereupon the plaintiff again treated Bitely and performed another operation on him placing him in a hospital This suit was brought by the plaintiff for professional services from Oct 10, 1924 to Dec 24, 1924, $447 also for the account of the hospital for care and services in connection with the latter treatment, $385, the second account having been assigned to the plaintiff

The court is of the opinion that Earl Bitely was not liable for this account The plaintiff declined to commence the treatment of him and sent him back to the company for authority to do so While the plaintiff testified that he would not finally have declined to perform the services for Bitely, he did feel that somebody should pay him for the services if authority therefor could be obtained, and that was the reason he sent him back for such authority Bitely obtained the written authority from the employer and brought it back to the plaintiff, and thereupon the services commenced It is evident, therefore, that the plaintiff did not in any way rely on Bitely hiring him, nor on any obligation on his part to pay him

Was J Fisher, the person who signed the order, authorized to sign it? The court is of the opinion that he was, and to bind the company thereby He testified that among his duties as foreman for the company, being in charge of the workmen was that of taking charge of any matters pertaining to injuries to the men He had blanks for reporting such injuries and had repeatedly issued them on forms furnished to him, that he gave this order so that Bitely could receive further treatment and that he thought the treatment would be under the workmens compensation law and did not know that the obligation of the insurer was limited to ninety days after the injury, under the law

The most difficult question was as to whether the defendant Higman Package Company was liable in view of the peculiar wording of the written authority, and taking into consideration that the workmens compensation law provides "During the first ninety days after the injury, the employer shall furnish, or cause to be furnished reasonable medical, surgical and hospital services and medicines when they are needed" The ninety days had long expired before the second services of the plaintiff commenced in October 1924 It was conceded by the plaintiff that he had no redress under the workmens compensation law, but he contended that, in view of the order even though it did refer to the workmen's compensation law, the Higman Package Company was liable for this claim, and the court is of the opinion that the company was liable for it—both for the physicians services and for the hospital bills If no order had been made, of course, under the law, the company would not have been liable, but giving a written order directed to the plaintiff asking him to render Bitely the necessary medical services as provided for in the workmens compensation act for the injuries received, did not limit it to the ninety-day period mentioned in the act The order authorized the plaintiff to treat Bitely further, and, the work having been done the services being rendered both by the plaintiff and by the hospital under the written authority the claims should be paid by the Higman Package Company The fact that Fishers idea was that the treatment would be under the law did not change the situation, nor did it change the question of the liability of his employer

An examination of the record satisfies the supreme court that the trial court reached the right result, the supreme court adding that, owing to the insistence that the order limited the company's liability to sums payable under the workmens compensation act, such order, while on one of the blanks provided by the department for use by employers was a plain direction to the plaintiff to render the necessary medical service to Bitely at the expense of the company Otherwise it was of no effect, as the time limit for furnishing such service under the act had long since expired

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Mosquito Surveys. A Handbook for Anti-Malarial and Anti-Mosquito Field Workers. By Malcolm E. MacGregor, Entomologist, Wellcome Field Laboratory, Wisley, Surrey, England. Cloth. Price, $5.50. Pp. 282, with 59 illustrations. New York: William Wood & Company, 1928.

The Art of Anesthesia. By Paluel J. Flagg, M.D., Anesthetist to St. Vincent's Hospital, Fifth Avenue and Flower Hospitals, New York City. Fourth edition. Cloth. Price, $5. Pp. 384, with 135 illustrations. Philadelphia: J. B. Lippincott Company, 1928.

Ueber die katalytischen Wirkungen der lebendigen Substanz. Arbeiten aus dem Kaiser Wilhelm-Institut für Biologie, Berlin-Dahlem. Von Otto Warburg. Paper. Price, 36 marks. Pp. 528, with 83 illustrations. Berlin: Julius Springer, 1928.

Medicolegal

Justified Refusal to Have Part of Finger Amputated

(Everitt v. Haldeman-Julius Pub. Co. (Kan.), 257 Pac. R. 939)

The Supreme Court of Kansas, in affirming a judgment which approved an award made by an arbitrator under the workmen's compensation law, says that the plaintiff while in the employ of the defendant sustained an accidental injury by which he lost a part of one of his fingers. The arbitrator found that the defendant offered the plaintiff an operation for the removal of the second joint of the injured finger, the defendant to pay all necessary expenses in connection with the operation, but that the plaintiff refused to submit to such operation. The arbitrator found further that the operation would be a minor one, with very slight danger to the life or health of the plaintiff, and was a proper operation, but that the plaintiff's refusal to submit to it was not unreasonable because it would dispossess him of a member of his body and all benefit that he derived therefrom and because the operation would not restore him to his former condition. The finding of the arbitrator concerning the reasonableness of the refusal of the plaintiff to submit to the operation was fully sustained by the evidence.

Under the workmen's compensation law, the supreme court cannot say that it is unreasonable for an employee who by accident has had part of one of his fingers torn off to refuse to submit to an operation for the removal of more of his finger, although the operation would probably result in overcoming part of the disability caused by the injury to the finger. Whether the refusal to submit to an operation is unreasonable or not is a question of fact to be determined by the trier of facts.

An award of $2,610 under the workmen's compensation law, as compensation to an injured employee for the loss of a part of a finger, is not excessive when, as a consequence of the injury, an attempt to use his hand causes pain in his hand and arm.

Cerebral Hemorrhage of Workman with Arteriosclerosis

(Texas Employers Ins. Ass'n v. McGrady et al. (Texas), 296 S. W. R. 920)

The Court of Civil Appeals of Texas says that the question was presented in this case as to whether a hemorrhage of the brain suffered by a workman was an accidental injury if caused alone by heavy manual labor. It has been held that the rupture of a blood vessel caused by an act of violent physical exertion is an accidental injury within the meaning of the workmen's compensation act. If the rupture, commonly called a "hemorrhage," results solely from hardened arteries or high blood pressure or any physical ailment, it cannot be classed as an accident but is a disease. However, the mere fact that the person in whom the rupture occurred has at the time diseased arteries or high blood pressure is not conclusive proof that the injury is a result of a disease and not accidental. The weakened state of the arteries caused by the physical disorder, or the abnormal strain caused by the high blood pressure, is merely a condition on which some exciting or producing cause may operate. If a rupture results from lifting a heavy weight by a healthy person, it is because the exertion is too great for one in that physical condition. The legal principle is the same if the rupture results from lifting a lighter weight by a person of less strength, whether the reduced strength is the result of natural or disease conditions. Whatever the physical condition of the individual may be, if it is such that it requires some physical exertion or strain to cause the rupture, the injury may properly be classed as an accidental one. If lifting 100 pounds may cause an accidental injury to one person, on what ground can it be said that a similar injury to another person by lifting 50 pounds, or 25 pounds, is not also accidental? If that is not true, then where shall we draw the line between the different physical conditions, or what shall we adopt as a standard of weight in determining whether the injury is the result of an accident or of a disease? It would not be satisfactory or logical to fix that standard at what it would require to injure one in normal health, for even persons in normal health vary in physical strength. Nor should it be said that an injury from overexertion by one in a debilitated condition is not an accident simply because it required less violent exercise to produce the injury. We cannot fix any standard of condition nor can we fix any standard of sufficiency of cause operating on the condition. The legal principle is the same, whether the injury results from lifting weights, as a can of paint, or by some other form of physical overexertion. The jury was instructed in this case that

> By the term "personal injury" is meant damage or harm to the physical structure of the body and such diseases as naturally result therefrom. . . . If J. J. McGrady was afflicted with hardening of the arteries prior to the 2d day of January, 1923, and while engaged in heavy manual labor he suffered a hemorrhage of the brain which proximately caused his death, and which hemorrhage of the brain was due to excessive physical exertion of his labor, or if such physical exertion was a contributing cause of the hemorrhage of the brain, then such injury would be an injury sustained in the course of his employment.

Complaint was made of the charge on the ground that it stated an incorrect definition of a compensable injury under the workmen's compensation act, but this court does not think that the instruction was subject to the objection made.

Total Disability of Physician from Chronic Nephritis

(Fitzgerald v. Globe Indemnity Co. (Calif.), 258 Pac. R. 458)

The District Court of Appeal of California, third district, in affirming a judgment in favor of the plaintiff, says that in 1916 the defendant issued to him an accident and health insurance policy which provided that if disease caused the insured to be "totally and continuously unable to transact all business duties," the company would pay a prescribed indemnity for the entire period thereof. The plaintiff was a physician and surgeon who owned two farms which he had planted to walnuts and which were operated by men employed by him. The complaint alleged that he had been totally and continuously unable to transact any business duties since Feb. 9, 1918, the disability being caused by chronic nephritis; that the defendant had paid the indemnity provided to be paid by the policy for total disability up to Jan. 19, 1922, but had refused to pay any indemnity thereafter. The judgment affirmed was for the amount of unpaid indemnity specified in the policy for total disability caused by disease.

In the early part of 1918 the plaintiff, acting on the advice of his physicians, entirely abandoned his practice of medicine and surgery. He testified, and the court found, that at the same time he gave up the management and supervision of his walnut groves and farming operations. But he frequently drove his automobile on short trips and a few times on longer ones. He drove it down town nearly every day and made purchases of household supplies. He executed certain contracts. For a time he received and examined monthly reports of the farming expenses. He maintained deposits in two banks and drew checks thereon from time to time. He paid taxes, insurance, and interest on money that he had borrowed. He performed other similar acts. The defendant contended that these acts constituted the transaction of "business duties" within the meaning of that term as used in the policy of insurance. However, while those acts were business transactions, they did not constitute engaging in business in the sense in which that term is ordinarily used. The mere fact that a professional man may make contracts in relation to his property, keep a bank account and pay his taxes, insurance and other debts does not necessarily show that he is engaging in a business outside his profession The physician, the lawyer, the teacher, the preacher and the priest do all these things without causing any one to think that their occupations are dual But to concede that the plaintiff's acts amounted to the transaction of business duties within the meaning of the policy would not require a reversal of the judgment The ultimate fact to be determined was not *what the plaintiff actually* did in the way of business duties but what, in the exercise of common care and prudence, he was reasonably able to do Proof of what he did was merely evidence tending to show his ability to do, just as the opinions of the physicians who testified were evidence tending to show that his ability was or was not total This expert opinion evidence alone, in view of the nature of the plaintiff s affliction was sufficient to create a substantial conflict, and the *finding of the trial court* thereon was *conclusive*

The fact that the insured may do some work or transact some business duties during the time for which he claims indemnity for total disability or even the fact that he may be physically able to do so is not conclusive evidence that his disability is not total if reasonable care and prudence require that he desist Both the evidence and the law supported the conclusion of the trial court that the plaintiff was totally and *continuously unable to transact the business duties of either* occupation in which he was engaged at the commencement of his illness His physicians advised him to desist therefrom and they testified at the trial that he was totally and continuously unable to transact his business duties without increasing bodily waste and hastening the progress of the disease that caused the disability It cannot be said as a matter of law that the occasional transactions in which he engaged constituted the performance of the substantial and material acts of his business or occupation in the usual and customary way, or conclusive proof that, in the exercise of reasonable care and prudence, he was able to transact such business duties

Services Rendered on Order Signed by Foreman

(Hodgen v Bitely et al (Mich) 215 N W R 37)

The Supreme Court of Michigan, in adopting as its own the opinion of the trial court, says that that court tried this cause without a jury and filed an opinion in which it was stated that Earl Bitely was injured, Feb 19 1924 while in the employ of a company that was insured in pursuance of the workmen's compensation law Bitely was treated by the plaintiff and had a leg amputated nine days after the accident The plaintiff was paid for his services rendered at that time the payment being by the company through its insurer In October, 1924 Bitely came to the plaintiff again for treatment, and the plaintiff sent him back to his employer for authority to the plaintiff to treat him further Bitely returned with a document addressed to the plaintiff, which said "Please render to Mr Earl Bitely the necessary medical services as provided for in the workmen s compensation act, for injury received on February 19, 1924 while in our employ Nature of injury amputation of leg Name of employer, Higman Package Company, by J Fisher" Thereupon the plaintiff again treated Bitely and performed another operation on him placing him in a hospital This suit was brought by the plaintiff for professional services from Oct 10, 1924, to Dec 24, 1924, $447 also for the account of the hospital for care and services in connection with the latter treatment, $385 the second account having been assigned to the plaintiff

The court is of the opinion that Earl Bitely was not liable for this account The plaintiff declined to commence the treatment of him and sent him back to the company for authority to do so While the plaintiff testified that he would not finally have declined to perform the services for Bitely, he did feel that somebody should pay him for the services if authority therefor could be obtained and that was the reason he sent him back for such authority Bitely obtained the written authority from the employer and brought it back to the plaintiff, and thereupon the services commenced It is evident, therefore, that the plaintiff did not in any way rely on Bitely hiring him, nor on any obligation on his part to pay him

Was J Fisher the person who signed the order, authorized to sign it? The court is of the opinion that he was, and to bind the company thereby He testified that among his duties as foreman for the company, being in charge of the workmen was that of taking charge of any matters pertaining to injuries to the men He had blanks for reporting such injuries and had repeatedly issued them on forms furnished to him, that he gave this order so that Bitely could receive further treatment, and that he thought the treatment would be under the workmen s compensation law, and did not know that the obligation of the insurer was limited to ninety days after the injury, under the law

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An examination of the record satisfies the supreme court that the trial court reached the right result the supreme court adding that, owing to the insistence that the order limited the company's liability to sums payable under the workmen s compensation act such order while on one of the blanks provided by the department for use by employers was a plain direction to the plaintiff to render the necessary medical service to Bitely at the expense of the company Otherwise it was of no effect as the time limit for furnishing such service under the act had long since expired

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THE ART OF ANÆSTHESIA By Paluel J Flagg M D Anæsthetist to St Vincent s Hospital Fifth Avenue and Flower Hospitals New York City Fourth edition Cloth Price $5 Pp 384, with 135 illustrations Philadelphia J B Lippincott Company 1928

UEBER DIE KATALYTISCHEN WIRKUNGEN DER LEBENDIGEN SUBSTANZ Arbeiten aus dem Kaiser Wilhelm Institut fur Biologie Berlin Dahlem Von Otto Warburg Paper Price 36 marks Pp 528, with 83 illustrations Berlin Julius Springer 1928

Medicolegal

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(Elliott v Haldeman Julius Pub Co (Kan) 257 Pac R 939)

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In the early part of 1918 the plaintiff acting on the advice of his physicians, entirely abandoned his practice of medicine and surgery He testified and the court found, that at the same time he gave up the management and supervision of his walnut groves and farming operations But he frequently drove his automobile on short trips and a few times on longer ones He drove it down town nearly every day and made purchases of household supplies He executed certain contracts For a time he received and examined monthly reports of the farming expenses He maintained deposits in two banks and drew checks thereon from time to time He paid taxes, insurance, and interest on money that he had borrowed. He performed other similar acts The defendant contended that these acts constituted the transaction of "business duties" within the meaning of that term as used in the policy of insurance However, while those acts were business transactions, they did not constitute engaging in business in the sense in which that term is ordinarily used The mere fact that a professional man may make contracts in

Actinomycosis—The five cases of actinomycosis reported by Snoke involved the jaw, chest wall and lung, vertebrae and lung, and abdomen and tongue, respectively In two of these cases, definite involvement occurred in or about the central system

Bilirubin Calcium Pigment and Gallstones—A characteristic pigment, the so-called bilirubin calcium pigment or calcium bilirubinate, has been found by Piersol et al in the bile drained from the duodenum with sufficient constancy to give it significance in the diagnosis of gallstones Of forty-two cases of cholelithiasis in which there was preoperative drainage, 73 8 per cent showed this pigment or cholesterin or both in the bile obtained from the duodenum All the cases manifesting both cholesterin crystals and pigment in the bile obtained by biliary drainage proved to be cases of gallstones In the majority of cases these elements were found only in the dark or B bile In only 35 per cent of proved cases of gallstone were the stones visualized by oral cholecystography, whereas in the same series a preoperative diagnosis of stones was made from duodenal tube contents in 47 per cent of cases A preoperative estimate of gallbladder function from the duodenal tube examination proved correct in 88 per cent On the other hand, a similar estimation by oral cholecystography was found correct in only 65 per cent of cases

Use of Fasting Donors in Blood Transfusion—The evidence obtained by Brem et al in one case suggests that some of the febrile reactions following transfusions may be due to toxic products of digestion in the nonfasting donor's blood, and that such reactions may be avoided by having donors fast for a certain period of time before the transfusion In the case cited, an overnight fast seemed to be sufficient

American Journal of Ophthalmology, Chicago

11 1 90 (Jan.) 1928

Retinitis with Massive Exudates L W Jones, Rochester, N Y —p 1
Retinitis Punctata Albescens A Sowers Chicago—p 4
Scleropostiridectomy Rational Operation in Glaucoma J W Jervey Greenville S C—p 7
Conjunctivoplasty in Certain Corneal Affections J Green St. Louis —p 12
India Rubber in Anterior Chamber Case Anterior Chamber Irrigator W B Doherty New York—p 16
Sterilization of Sharp Instruments M H Post St. Louis—p 18
Perithelioma of Orbit R. W Bledsoe Covington Ky—p 21
Necessity for Correcting Remediable Eye Defects in School Children W H Wilder Chicago—p 28
Ophthalmologic Clinic in Paris G O Ring Philadelphia—p 35
Intravenous Injections of Mercurochrome in Suppurative Eye Conditions J N Duggan Bombay India—p 39
Primary Spasm of Superior Oblique Muscle. M E Brownell Wichita, Kan—p 41
Syphilitic Granulations of Conjunctiva E L Goar Houston Texas— —p 42
Unusual Clinical Phenomenon Occurring in Case of Iritis H S Gradle, Chicago—p 43
Epithelial Nevus H D Lamb St Louis.—p 44

Annals of Internal Medicine, Ann Arbor, Mich

1 273 366 (Nov) 1927

*Epilepsia Tarda D Riesman and T Fitz Hugh Jr, Philadelphia—p 273
Allergic Reaction Basis of Tuberculin Therapy F M Pottenger Monrovia Calif—p 283
Congenital Hypertrophy Involving Right Side of Female Aged 6 E G Wakefield New York—p 292
*Saline Wheal Test as Measure of Blood Supply in Arterial Disturbances of Extremities W G Stern Cleveland—p 297
Mitral Heart Roentgenologically D Steel Cleveland—p 302
Rickets H J Gerstenberger J I Hartman, J D Nourse N C Wetzel and D N Smith Cleveland—p 305
Mixed Tumor of Parotid Type Orbital in Location E D Cumming Cleveland—p 310
Chronic Ulcerative Colitis H W Soper, St Louis—p 313

Epilepsia Tarda—Twelve cases of epilepsia tarda all of the recurrent grand mal type, are reported by Riesman and Fitz-Hugh and a classification is suggested The average age of onset of convulsions was 56, with 41 as the earliest and 73 as the latest A background of combined circulatory defects is demonstrable in all cases indicating the probability that moments of deranged cerebral circulation constitute one exciting cause of the convulsions in these cases Differential diagnosis of the types of epilepsia tarda is presented with emphasis on their separation from uremia, in which generalized convulsions are rare and only terminal Prognosis and treatment are briefly presented A selected bibliography is appended

Value of Saline Wheal Test.—Stern asserts that in the absence of edema, the intracutaneous salt solution test is a simple, rapid and accurate method of determining circulatory deficiencies in the extremities Sixty minutes or more is the normal disappearance time of the salt solution In all instances in which clinical circulatory deficiency exists, the disappearance time is diminished, in the area just above the seat of a gangrene (existing or threatened), it is frequently as low as five minutes

Archives of Internal Medicine, Chicago

41 1 140 (Jan) 1928

*Clinical Significance of Gallop Rhythm P D White Boston—p 1
Alkalis and Renal Injury E J Stieglitz, Chicago—p 10
*Iodine Starch Test of Body Fluids A Bassler New York—p 18
Peritonitis III Active Immunization Against Experimental B Coli Peritonitis H Goldblatt and B Steinberg Cleveland—p 42
Blood Volume in Edema of Glomerular Nephritis and Nephrosis G E Brown and L G Rowntree, Rochester Minn—p 44
Mumps Polyneuritis Complicated by Quadriplegia with Bilateral Facial Paralysis W S Collens and M A Rabinowitz New York—p 61
*Effect of Iodine in Toxic Adenoma J B Youmans and R H. Kampmeier Ann Arbor Mich—p 66
*Chronic Ulcerative Colitis Bacterial Etiology M Paulson, Baltimore. —p 75
Logarithmic Tables for Computing Surface Area of Body According to Dubois Formula C H McCloy New York—p 97
Intradermal Salt Solution Test in Nephritis in Adults A Feldman and J S Reifsneider Chicago—p 102
*Intestinal Absorption Search for Low Residue Diet K Ho or Honolulu W C Alvarez and F C Mann Rochester Minn—p 112
Streptothrix Necrotic Bronchopneumonia I H Page New York—p 127

Significance of Gallop Rhythm—An analysis made by White of 100 patients with gallop rhythm on the basis of types, according to the time of the extra or third sound, showed sixty-four apparently protodiastolic, twelve presystolic, four systolic and twenty unclassified Gallop rhythm is generally a bad prognostic sign, almost half of the 100 patients are known to have died within two years of the discovery of the sign, thirty-two died within six months A considerable number of the remaining fifty-five patients were seriously ill or dead when last heard from Gallop rhythm occurred in both young and old Forty-eight per cent of the patients were between 50 and 70 Coronary disease alone or in combination was apparently present in 54 per cent, actual coronary thrombosis being diagnosed in 21 per cent Hypertension alone or complicated was present in 40 per cent, syphilitic aortitis in 13 per cent, rheumatic heart disease in 12 per cent, nephritis in 12, uremia in 10, effort syndrome alone in 3, pericarditis in 3, subacute bacterial endocarditis in 2, congenital heart disease in 1 and unknown factors in 5 Congestive failure was the most outstanding characteristic, being present in at least 61 per cent Angina pectoris occurred in 25 per cent. Cardiac asthma occurred in fourteen cases The heart rate was usually rapid, averaging about 100 At least three fourths of the cases showed rates between 80 and 120 The blood pressure was variable, the systolic being between 100 and 150 mm of mercury in 43 per cent between 150 and 200 in thirty-five cases over 200 in nineteen, and under 100 in three Pulsus alternans was found in 21 per cent The heart was considerably enlarged in 60 per cent, definitely normal in size in only six, and doubtful in eighteen The heart sounds were poor in 52 per cent of the cases and good in only fourteen Valvular disease was uncommon aortic regurgitation being found alone in fifteen cases, mitral stenosis alone in four and the two conditions combined in four Apical systolic murmurs, however were common, loud in twelve and slight to moderate in thirty three There were no heart murmurs in thirty-two cases Electrocardiograms were obtained in sixty-four of the patients Only two of these were normal Renal function as tested by the phenolsulphonphthalein test was normal in eight and abnormal in nine of the seventeen cases so tested The amount of nonprotein nitrogen in the blood was normal in fifteen and too high in only five of the twenty cases in which such tests were made Digitalis as a possible factor in the production of gallop rhythm wa

Current Medical Literature

AMERICAN

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Titles marked with an asterisk (*) are abstracted below

American J Medical Sciences, Philadelphia

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Anatomy of Brain from Clinical Point of View F von Muller Munich, Germany —p 1
Tumors of Brain and Syphilis F P Moersch, Rochester Minn —p 12
Thalamic Syndrome Case E S Gurdjian Rochester N Y —p 18
*Diabetes Mellitus Death Necropsy A H Gordon, C L Connor and I M Rabinowitch Montreal —p 22
*Carotinemia W C Stoner Cleveland —p 31
*Use of Dextrose in Treatment of Obesity B Gordon and E von Stanley, Philadelphia —p 37
*Unusual Types of Hemorrhagic Disease H Z Giffin Rochester Minn —p 44
Immediate Effect of Arterial Ligation H E Pearse Jr Baltimore —p 49
*Treatment of Chronic Auricular Fibrillation with Quinidine Sulphate E P Maynard Jr New York —p 55
*Ball Thrombus in Left Auricle Case G W Covey, R Crook and F L Rogers Lincoln, Neb —p 60
*Brucella Melitensis (Abortus) Bacteremia Associated with Endocarditis R W Scott and O Saphir Cleveland —p 66
*Actinomycosis P O Snoke Philadelphia —p 69
Carcinoma of Esophagus Fifty Cases J Sherman San Francisco —p 79
*Diagnostic Value of Duodenal Drainage in Gallstone Disease Significance of So Called Bilirubin Calcium Pigment G M Piersol, H L Bockus and H Shay Philadelphia —p 84
*Use of Fasting Donors in Blood Transfusions W V Brem, A H Zeiler and R W Hammack Los Angeles —p 96
Bile Pigments and Bile Acids of Blood in Jaundice H F Shattuck I Katayama and J A Killian New York —p 103

Diabetes Mellitus and Disease of Biliary Passages—The case reported by Gordon et al demonstrates that, in spite of the clear history, it does not necessarily follow that diabetes following repeated attacks of gallbladder disease is due to the latter This may explain the failures at times of surgery to alleviate or improve diabetes when associated with disease of the biliary passages This case also emphasizes the fact that the clinical picture (the attitude, expression, color and nutrition) is not a reliable index of progress in diabetes treated with insulin Blood analyses are here indispensable This patient appeared to be well nourished and felt well The postmortem observations, however, showed that the skin did not contain fat, but water Also, because of the long duration of the disease and the arteriosclerosis, other evidence of active diabetes (glycosuria) was masked The patient had a raised renal threshold for sugar This case is another demonstration of the relationship between the cholesterol content of the blood and prognosis The differential diagnosis during the final stages of the disease was difficult, because of a combination of conditions not uncommon but not frequently mentioned in the literature Cerebral manifestations of diabetic coma may simulate those of uremia or cerebral hemorrhage Suppression of urine, albumin and casts, high blood urea and creatinine, leukocytosis, altered reflexes and fever were all present in this case Other clinical features of interest were the presence of insulin edema, the color of the skin and the absence of response to insulin The pancreas and the blood vessels of the brain were the organs of special postmortem interest

Carotinemia—In a carefully studied case of carotinemia in an adult, the pigment was demonstrated in the blood serum by Stoner The skin discoloration disappears on the withdrawal of foods rich in carotinoids The condition is unassociated with disturbing symptoms, and is of particular interest only from the standpoint of differential diagnosis It has been confused with true jaundice and vague liver trouble

Use of Dextrose in Treatment of Obesity—The total customary caloric intake (1,800 to 3,000 calories) was rearranged by Gordon and von Stanley in a series of eleven obese young women, so that the carbohydrate portion was administered between meals as dextrose candy In six instances, an average weekly loss of 1 5 Kg occurred This suggested that dextrose administered under the conditions of the experiment was utilized largely as fuel To a further series, a diet of between 1,100 and 1,400 calories, derived largely from fat and protein was administered at meal time In addition, dextrose candy (100 to 150 calories) was administered between meals, usually during periods of exercise or at times when symptoms of fatigue, hunger and weakness were experienced A fairly constant loss of weight occurred apparently without untoward effect or discomfort to the patients It appears that weight loss to a considerable extent was due to moderate starvation at meal time, the dextrose being used principally to relieve symptoms and to supply energy during effort It is suggested that a disturbance in carbohydrate metabolism may be responsible for the storage of fat and for certain hypoglycemic-like symptoms occurring perhaps because of insufficient available glycogen

Hemorrhagic Diseases—A group of five cases of severe hemorrhagic disease presenting unusual features is reported by Giffin Cases of splenomegaly in which mild types of purpura occur are not uncommon, but in the two cases reported the features of splenic anemia are associated with a more severe type of purpura which shows the coagulation features of hemorrhagic purpura An instance in which severe hemorrhagic disease occurred in the women of four generations without the characteristics either of hemophilia or of hemorrhagic purpura suggests that the bleeding may be due to some deficiency of the blood that has not yet been identified An instance of severe hemorrhagic disease with all the features of hemorrhagic purpura except thrombocytopenia also suggests the possible presence of some unknown factor of coagulation which renders diagnosis at present impossible A case of severe hemorrhagic disease with extremely high viscosity of the blood, owing to an enormous increase in the serum globulin and other changes of uncertain significance, emphasizes the lack of knowledge concerning the proteins of the blood and presents a clinical syndrome which has not been recorded

Use of Quinidine Sulphate in Chronic Auricular Fibrillation—In a series of fifty-three cases of chronic auricular fibrillation treated with quinidine sulphate, sinus rhythm returned in thirty-eight In twenty-five of the entire series the rhythm remained regular for one month or more and in fifteen the sinus rhythm continued for at least six months Evidence is presented by Maynard to show that there is a definite tendency for auricular fibrillation to become permanent Sinus rhythm may be established five, six or even seven times over a period of years, but the time finally comes in the majority of cases when further attempts are unsuccessful One case of collapse and sudden death following quinidine therapy is reported Various toxic rhythms induced by quinidine are described, including auricular flutter and ventricular paroxysmal tachycardia Sinus rhythm was established in 90 per cent of the cases in which the degree of compensation was classed as good Short duration of fibrillation was a good prognostic sign The effect of quinidine on the various components of the electrocardiogram is described

Ball Thrombus in Left Auricle—A typical case presenting the signs of mitral stenosis, auricular fibrillation, cardiac failure, embolism in an artery of the leg, loud cardiac murmur ("noise"), pronounced thrill and death is reported by Covey et al The postmortem examination showed the presence of a typical ball thrombus occupying the left auricle, in the presence of marked mitral stenosis

Associated Acute and Chronic Endocarditis—An acute endocarditis superimposed on a chronic endocarditis was seen by Scott and Saphir in a patient from whose blood *Brucella melitensis* of the *abortus* variety was recovered on several occasions, both ante mortem and post mortem The history of rheumatic fever suggests that the endocarditis was rheumatic in origin, but Aschoff's bodies were not found in the myocardium No source of any other infection was disclosed at autopsy Though there are recorded cases of endocarditis attributed to *Br melitensis*, there is no proof in this case that the endocarditis was caused by *Br melitensis* of the *abortus* variety The authors believe that their case is one of acute and chronic endocarditis associated with bacteremia

Actinomycosis—The five cases of actinomycosis reported by Snoke involved the jaw, chest wall and lung, vertebrae and lung, and abdomen and tongue, respectively In two of these cases, definite involvement occurred in or about the central system

Bilirubin Calcium Pigment and Gallstones—A characteristic pigment the so-called bilirubin calcium pigment or calcium bilirubinate, has been found by Piersol et al in the bile drained from the duodenum with sufficient constancy to give it significance in the diagnosis of gallstones Of forty-two cases of cholelithiasis in which there was preoperative drainage, 73 8 per cent showed this pigment or cholesterin or both in the bile obtained from the duodenum All the cases manifesting both cholesterin crystals and pigment in the bile obtained by biliary drainage proved to be cases of gallstones In the majority of cases these elements were found only in the dark or B bile In only 35 per cent of proved cases of gallstone were the stones visualized by oral cholecystography, whereas in the same series a preoperative diagnosis of stones was made from duodenal tube contents in 47 per cent of cases A preoperative estimate of gallbladder function from the duodenal tube examination proved correct in 88 per cent On the other hand, a similar estimation by oral cholecystography was found correct in only 65 per cent of cases

Use of Fasting Donors in Blood Transfusion.—The evidence obtained by Brem et al in one case suggests that some of the febrile reactions following transfusions may be due to toxic products of digestion in the nonfasting donor's blood, and that such reactions may be avoided by having donors fast for a certain period of time before the transfusion In the case cited, an overnight fast seemed to be sufficient

American Journal of Ophthalmology, Chicago

11 1 90 (Jan) 1928

Retinitis with Massive Exudates L W Jones, Rochester, N Y —p 1
Retinitis Punctata Albescens A Sowers Chicago—p 4
Scleropostiridectomy Rational Operation in Glaucoma J W Jervey Greenville S C—p 7
Conjunctivoplasty in Certain Corneal Affections J Green St. Louis —p 12
India Rubber in Anterior Chamber Case Anterior Chamber Irrigator W B Doherty New York—p 16
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Perithelioma of Orbit. R W Bledsoe Covington Ky —p 21
Necessity for Correcting Remediable Eye Defects in School Children W H Wilder Chicago—p 28
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Unusual Clinical Phenomenon Occurring in Case of Iritis H S Gradle, Chicago—p 43
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Annals of Internal Medicine, Ann Arbor, Mich

1 *273 366 (Nov) 1927*

*Epilepsia Tarda D Riesman and T Fitz Hugh Jr , Philadelphia—p 273
Allergic Reaction Basis of Tuberculin Therapy F M Pottenger Monrovia Calif—p 283
Congenital Hypertrophy Involving Right Side of Female, Aged 6 E G Wakefield New York—p 292
*Saline Wheal Test as Measure of Blood Supply in Arterial Disturbances of Extremities W G Stern Cleveland—p 297
Mitral Heart Roentgenologically D Steel Cleveland—p 302
Rickets H J Gerstenberger J I Hartman J D Nourse N C Wetzel and D N Smith Cleveland—p 305
Mixed Tumor of Parotid Type Orbital in Location E D Cumming Cleveland—p 310
Chronic Ulcerative Colitis H W Soper, St Louis—p 313

Epilepsia Tarda—Twelve cases of epilepsia tarda all of the recurrent grand mal type, are reported by Riesman and Fitz-Hugh, and a classification is suggested The average age of onset of convulsions was 56, with 41 as the earliest and 73 as the latest A background of combined circulatory defects is demonstrable in all cases indicating the probability that moments of deranged cerebral circulation constitute one exciting cause of the convulsions in these cases Differential diagnosis of the types of epilepsia tarda is presented with emphasis on their separation from uremia, in which generalized convulsions are rare and only terminal Prognosis and treatment are briefly presented A selected bibliography is appended

Value of Saline Wheal Test.—Stern asserts that in the absence of edema, the intracutaneous salt solution test is a simple, rapid and accurate method of determining circulatory deficiencies in the extremities Sixty minutes or more is the normal disappearance time of the salt solution In all instances in which clinical circulatory deficiency exists, the disappearance time is diminished, in the area just above the seat of a gangrene (existing or threatened), it is frequently as low as five minutes

Archives of Internal Medicine, Chicago

41 1 140 (Jan) 1928

*Clinical Significance of Gallop Rhythm P D White Boston—p 1
Alkalis and Renal Injury E. J Stieglitz, Chicago—p 10
*Iodine Starch Test of Body Fluids A Bassler New York—p 18
Peritonitis III Active Immunization Against Experimental B Coli Peritonitis H Goldblatt and B Steinberg Cleveland—p 42
Blood Volume in Edema of Glomerular Nephritis and Nephrosis G E. Brown and L G Rowntree, Rochester Minn—p 44
Mumps Polyneuritis Complicated by Quadriplegia with Bilateral Facial Paralysis W S Collens and M A Rabinowitz New York—p 61
*Effect of Iodine in Toxic Adenoma J B Youmans and R H. Kampmeier Ann Arbor Mich—p 66
*Chronic Ulcerative Colitis Bacterial Etiology M Paulson Baltimore —p 75
Logarithmic Tables for Computing Surface Area of Body According to Dubois Formula C H McCloy New York—p 97
*Intradermal Salt Solution Test in Nephritis in Adults A Feldman and J S Reifsneider Chicago—p 102
*Intestinal Absorption Search for Low Residue Diet K. Hosoi Honolulu, W C Alvarez and F C Mann Rochester Minn—p 112
Streptothrix Necrotic Bronchopneumonia I H Page New York—p 127

Significance of Gallop Rhythm—An analysis made by White of 100 patients with gallop rhythm on the basis of types according to the time of the extra or third sound, showed sixty-four apparently protodiastolic, twelve presystolic four systolic and twenty unclassified Gallop rhythm is generally a bad prognostic sign, almost half of the 100 patients are known to have died within two years of the discovery of the sign, thirty-two died within six months A considerable number of the remaining fifty-five patients were seriously ill or dead when last heard from Gallop rhythm occurred in both young and old Forty-eight per cent of the patients were between 50 and 70 Coronary disease alone or in combination was apparently present in 54 per cent, actual coronary thrombosis being diagnosed in 21 per cent Hypertension alone or complicated was present in 49 per cent syphilitic aortitis in 13 per cent, rheumatic heart disease in 12 per cent, nephritis in 12, uremia in 10, effort syndrome alone in 3, pericarditis in 3, subacute bacterial endocarditis in 2, congenital heart disease in 1 and unknown factors in 5 Congestive failure was the most outstanding characteristic, being present in at least 61 per cent Angina pectoris occurred in 25 per cent. Cardiac asthma occurred in fourteen cases The heart rate was usually rapid, averaging about 100 At least three fourths of the cases showed rates between 80 and 120 The blood pressure was variable, the systolic being between 100 and 150 mm of mercury in 43 per cent, between 150 and 200 in thirty-five cases over 200 in nineteen, and under 100 in three Pulsus alternans was found in 21 per cent The heart was considerably enlarged in 60 per cent, definitely normal in size in only six, and doubtful in eighteen The heart sounds were poor in 52 per cent of the cases and good in only fourteen Valvular disease was uncommon aortic regurgitation being found alone in fifteen cases, mitral stenosis alone in four and the two conditions combined in four Apical systolic murmurs however were common, loud in twelve and slight to moderate in thirty-three There were no heart murmurs in thirty-two cases Electrocardiograms were obtained in sixty four of the patients Only two of these were normal Renal function as tested by the phenolsulphonphthalein test was normal in eight and abnormal in nine of the seventeen cases so tested The amount of nonprotein nitrogen in the blood was normal in fifteen and too high in only five of the twenty cases in which such tests were made Digitalis as a possible factor in the production of gallop rhythm was negligible As a matter of fact, in some cases the gallop rhythm disappeared coincidentally with the clinical improvement following rest and the administration of digitalis

Iodine Starch Test of Body Fluids—Bassler has found the original test of value in diabetes mellitus, both in diagnostic and therapeutic ways It helps in the understanding of true pancreatic disease A digestive reason for diabetes is presented, and when the test is definite, it shows when pancreatic feedings should be employed, the dosage of insulin may then perhaps be reduced or discontinued A series of instances of verified diseases of the gallbladder is presented in which the test was of diagnostic value and helpful in differentiating the operative from the medical type of case The Meltzer-Lyon method has only limited value in diagnosing these disorders It is advisable to employ this test in clinical work and in the way that it was originally proposed Unlike most laboratory tests that are of value only when positive, it also has a value when negative

Effect of Iodine in Toxic Adenoma—The response to treatment with iodine in thirty unselected patients with toxic adenoma who were previously untreated with iodine was essentially the same as that seen in unselected cases of exophthalmic goiter Whatever differences exist are apparently quantitative, not qualitative Youmans and Kampmeier believe that any essential difference in the pathogenesis of toxic adenoma and exophthalmic goiter cannot be assumed to exist on the basis of this response to treatment with iodine

Chronic Ulcerative Colitis—Fourteen cases of acute exacerbations of chronic ulcerative colitis have been studied by Paulson with reference to a bacterial etiology Ten distinct types of streptococci were isolated in these cases No one type was present in more than three cases Seven types of these streptococci were intravenously injected into thirty-four rabbits, five of which produced lesions in these animals Twenty other rabbits were injected intravenously with seven types of bacteria from sources other than the bowel in cases of ulcerative colitis The author believes that there was no difference between lesions produced in the intestines of rabbits by the intravenous injection of organisms isolated from cases of ulcerative colitis or from other sources Grossly and microscopically, all lesions were similar, differing only as to their location within the intestinal tract Paulson is of the opinion that the bacterial etiology of ulcerative colitis is still undetermined

Intradermal Salt Solution Test in Nephritis—A study of the intradermal salt solution test was made by Feldman and Reifsneider in eighteen cases of nephritis in adults with the following results The wheals caused by the salt solution disappeared in less than thirty minutes except in one case (case 13, alkalosis), only when edema or a history of edema, was present A decreasing disappearance time was associated with an unfavorable progress of the condition, and an increasing disappearance time with improvement, a very short disappearance time, which persisted in spite of treatment, was of bad prognostic significance There was no close relationship between the retention of nitrogen and the sodium chloride and cholesterol content of the blood, on the one hand, and the disappearance time on the other In cases in which the carbon dioxide capacity was determined and evidence of either severe acidosis or alkalosis was found, there was also a marked shortening of the disappearance time, even in the absence of palpable edema More examples of these types should be examined

Low Residue Diet—The experiments reported by Hosoi et al suggest that the best basis for a low residue diet is lean meat To this might be added rice, hard boiled eggs, sugars (except lactose) and probably small amounts of fruit juices, tea and coffee The highest degrees of absorption could probably be secured by giving small amounts of food several times during the day Experience with dogs suggests that less material will be carried into the colon if the diet is kept fairly dry There is considerable evidence both in the experiments here reported and in the literature to show that when it is desired to prevent bowel movements, milk should not be given

Archives of Otolaryngology, Chicago

7 1 102 (Jan) 1928

Teaching Bronchoscopy and Esophagoscopy C Jackson Philadelphia —p 1
*Pathology of Mastoiditis in Infants B J McMahon St Louis —p 13
*General Sepsis of Otitic Origin Treatment by Blood Transfusion and Germicidal Dye H I Lillie Rochester Minn —p 30
Unusual Type of Diplacusis D Macfarlan Philadelphia —p 41
*Pulsion Diverticulum Combined with Mega Esophagus L Van Den Wildenberg Louvain Belgium —p 44
Deep Actinomycosis of Neck and Mediastinum L Van Den Wildenberg Louvain, Belgium —p 50
Aberrant Branchial Cyst Encroaching on Glottis and Causing Suffocation and Death W R Watson Philadelphia —p 57
Combination Tonsil Forceps and Tongue Depressor M Fineberg Montreal —p 59
Functional Examination of Hearing Deaf Mutism and Education of Deaf Annual Review of Literature R Sonnenschein Chicago —p 60

Pathology of Mastoiditis in Infants—Of thirty-nine infants with mastoiditis, twenty-two showed the symptom complex of increased temperature, diarrhea, vomiting, loss of weight and athrepsia Six of these died McMahon says that the prognosis is bad if, when edema of the mucosa of the mastoid antrums is found microscopically, the "diarrhea-vomiting symptom complex" is present The prognosis is good when fibrosis of the mucosa of the mastoid antrums is found microscopically, even though the "diarrhea-vomiting complex" is present When the "diarrhea-vomiting complex" is not present, the prognosis is equally good whether the mucosa of the mastoid antrums shows edema or fibrosis microscopically

Treatment of General Sepsis by Blood Transfusion and Dye Germicides—Blood transfusion and the intravenous injection of dye germicides has been suggested as a valuable supportive *therapeutic measure when used in conjunction* with well directed surgical intervention in certain cases of general sepsis secondary to suppurative disease of the temporal bone Lillie's experience has convinced him that their use as an adjunct therapeutic measure is rational if the cases are properly chosen and the agents properly prepared and administered The supportive effect of blood transfusion is to shorten convalescence, the use of the germicidal dye is a curative measure He neither defends nor advocates their use

Pulsion Diverticulum and Mega-Esophagus—Van Den Wildenberg has observed twenty-five cases of pulsion diverticulum, and of these, one was a case of epiphrenic type The diverticulum in the case reported was of the volume of a walnut, located at about 2 cm above the cardia forward and to the right, with a large opening narrowing itself temporarily by spasm There was also dilatation of the esophagus, with prolonged stasis in the esophagus and in the diverticulum

Atlantic Medical Journal, Harrisburg, Pa

31 219 282 (Jan) 1928

Pennsylvania s Greatest Public Need C H Frazier Philadelphia —p 219
*Cervical Rib A W Adson Rochester, Minn —p 222
Cancer of Rectum Symptoms C C Mechling Pittsburgh —p 232
Id Diagnosis J H Allen Philadelphia —p 234
Id Choice of Operation D B Pfeiffer Philadelphia —p 236
Cardiospasm Two Cases J D Garvin Pittsburgh —p 240
Mental Twist T Diller, *Pittsburgh —p 241*
*Case of Meningococcic Meningitis Treated by Lumbar Cisternal and Ventricular Routes R N Klemmer Lancaster Pa —p 242

Cervical Rib—Three hundred and three cases of cervical rib are analyzed by Adson Roentgen-ray examination revealed a cervical rib on the right side in seventy, a cervical rib on the left in ninety-one, and bilateral cervical ribs in 143 In 167 of the series, the presence of cervical ribs was discovered accidentally, as there were no symptoms In 100 although the roentgenograms were positive, the symptoms were mild and of such a character that surgical treatment was deemed inadvisable In seventy seven of the 100 there was indefinite pain in the neck and shoulder, radiating only slightly down the arm and hand, in five, the pain was localized and radiated along the ulnar nerve, in two it radiated along the course of the internal cutaneous nerve, and in four, it radiated definitely over the brachial plexus, but was not severe In twelve cases the pain was exaggerated by rotation of the head, or by elevation of the chin Slight atrophy was observed over the ulnar distribution in twelve

Subjective anesthesia was present in the ulnar distribution in seven cases, in the internal cutaneous in two, and in the brachial distribution in four Circulatory disturbance was present in four Surgical treatment was carried out in forty-one cases The anterior approach and tenotomy of the scalenus anticus are preferred by Adson to the transcervical approach and resection of the cervical rib since the same relief is offered, the procedure is less formidable, and postoperative numbness in the arm and palsy of the brachial plexus are avoided

Treatment of Meningococcic Meningitis—The successful cure of an unusually resistant case of meningococcic meningitis is reported by Klemmer Over a period of twenty-two days the patient received six spinal, one ventricular, and nine cisternal injections of antimeningococcic serum It is interesting to note that, for each injection, save one, she was under complete ether anesthesia for periods of from one half to more than one hour, without apparent deleterious effect On several occasions when puncture was attempted without ether anesthesia, she begged to be 'put to sleep" One year and four months after discharge, the patient was apparently in perfect physical condition

Boston Medical and Surgical Journal

197 1385 1438 (Jan 26) 1928

Selections from Medical Writings and Sayings of Dr Oliver Wendell Holmes G H Monks Boston—p 1385
Surgery of Pulmonary Tuberculosis W Whittemore Boston—p 1395
*Diagnosis and Prognosis of Juvenile Tuberculosis H D Chadwick Westfield Mass—p 1399
Protection of Firemen Against Occupational Hazards S Warren, Boston—p 1401

Juvenile Tuberculosis—Chadwick's paper is based on the examination of 50,000 school children between the ages of 5 and 15, an investigation carried on during the last three years by the Massachusetts Department of Public Health Of nearly 25 000 children, 29 6 per cent reacted to the Pirquet tuberculin test This group was made up of 16 per cent of contacts and many underweight children The percentage of reactors among the contact children was nearly twice as high as among the noncontact group The children who were underweight had a little higher percentage of reactors than those who were average weight The rural group showed 27 5 per cent reactors as compared with 29 9 per cent for the urban children All the school children in three small towns were given the tuberculin test, and the reactors averaged 16 per cent A diagnosis of hilum tuberculosis was made in 3 7 per cent of those examined, 10 4 per cent more were classified as suspects Of the reactors 12 5 per cent were diagnosed as having hilum tuberculosis and 35 per cent more of them were classified as suspects Forty-seven and five-tenths per cent of the reactors, therefore appeared to be in need of special care or treatment This would be equivalent to between 9 and 10 per cent of the whole school population below the high school grade The prognosis in those children if the condition is discovered before the secondary or adult type develops, is excellent, provided they receive good home supervision or care, or are given preventorium or sanatorium treatment It is probable that many of the deaths from tuberculosis that occur in adolescence and early adult life are the result of massive infection in childhood that was unrecognized and untreated In the early pulmonary case in children, if found and treated before tubercle bacilli are present in the sputum, the prognosis is good. If, however these secondary lesions go on to the ulcerative stage and bacilli are set free the child, if under 16 will almost invariably die of tuberculosis, regardless of what treatment is given

Colorado Medicine, Denver

25 1 42 (Jan) 1928

Renaissance of Surgery in Europe Toward Close of Middle Ages A Brown Omaha—p 3
Mechanism of Formation of Hydronephrosis and Hydro-Ureter W M Spitzer Denver—p 8
*Spinal Fractures A Thomas Pueblo—p 19
Desensitization to Tuberculoprotein. G H Cattermole Boulder—p 25
Symptomatology and Treatment in Chronic Ulcerative Colitis A J Chisholm Denver—p 28
Goiter Problem S D Van Meter Denver—p 31
Closure of Abdominal Incision F C Buchtel Denver—p 41

Spinal Fractures—Among 100 cases of spinal fractures reviewed by Thomas there were eighteen deaths, fourteen patients with permanent and total disability, thirty patients with a permanent partial disability averaging 50 per cent twenty-six patients without any disability, and twelve patients unaccounted for Of thirty-four patients with crush fracture without cord lesion, nineteen (55 per cent) had a permanent disability averaging over 50 per cent Of seventeen in whom the fracture was limited to the transverse processes, ten (59 per cent) had a permanent disability averaging from 30 to 40 per cent Thomas feels that in the face of such results as are obtained by conservative methods of treatment operative fixation of the fractured vertebrae seems justified in the cases of body fractures uncomplicated by cord injury

Florida Medical Association Journal, Jacksonville

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Tonsil as Primary Focus of Infection. F P Herman, West Palm Beach—p 319
Why General Practitioner Should be Familiar with Anatomy and Pathology of Mastoid and Petrous Portions of Temporal Bone J B Larramore, Jacksonville—p 337
Treatment of Eclampsia C J Collins Orlando—p 340
Facial Paralysis with Marked Vertigo J D Gable, Lake City—p 342
Pathologic Currents and Asthma H Byrd Tampa—p 344
Vincent's Infection of Skin with Secondary Infection of Prepuce. E D French Miami—p 347
Accidental Denudation of Scrotum and Penis H Q Jones Fort Myers—p 349
Preoral Endoscopy Cases S B Forbes Tampa—p 350

Georgia Medical Association Journal, Atlanta

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Increasing Usefulness of Wassermann Test P Eaton and F L Damren Augusta—p 5
Otomycosis A G Fort Atlanta—p 8
Injection of Internal Hemorrhoids Fifty Cases M C Pruitt Atlanta—p 10
Rat Bite Fever in Georgia R S Leadingham Atlanta—p 16
Chronic Duodenal Ileus. J K Quattlebaum Savannah—p 20
So Called Irreducible Minimum in Surgical Mortality C. W Roberts Atlanta—p 24
Community and Small Hospital J Van De Vrede Atlanta—p 30
Diagnosis and Treatment of Pulmonary Tuberculosis J A Redfearn Albany—p 32
Public Health from Busines Man's Standpoint W Mizell Jr, Folkston—p 34

Illinois Medical Journal, Oak Park

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Relation of Medical School to Community F C McLean Chicago—p 24
Gallbladder or Upper Abdominal Conditions C E Humiston, Chicago—p 28
Fractures of Humerus F G Dyas Chicago—p 30
Immunities Their Possibilities J W Van Derslice, Oak Park.—p 31
Meckel's Diverticulum H N Rafferty, Robinson—p 34
Foreign Body (Catheter) in Peritoneal Cavity G L Armstrong Taylorville.—p 39
Fractures About Elbow Joint. P H Kreuscher, Chicago—p 41
Gastric Carcinoma B D Baird, Galesburg—p 44
Carcinoma of Breast with Electrical Resection and Radiotherapy B H Orndoff Chicago—p 46
Articular and Juxta Articular Fractures H B Thomas Chicago—p 50
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Tuberculosis in Mexicans. J J Mendelsohn Chicago—p 62
Psychoses of Shakespearean Characters C L Whitmire Augusta, Ga—p 64

Indiana State M Association Journal, Fort Wayne

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*Catheter Cystitis—Misnomer H Cabot Ann Arbor, Mich—p 1
*O Iodoxybenzoic Acid in Treatment of Arthritis W C. Service Indianapolis—p 5
Pernicious Anemia A S Giordano South Bend—p 12
Gallbladder Cases (Surgical Clinic) J Y Welborn Evansville—p 15

Catheter Cystitis—Cabot asserts that there is no evidence to show that the catheter ever played any considerable part in the production of infection In every case of infection consequent on overdistention in reflex retention of urine, there is only one person responsible, namely, the surgeon

O-Iodoxybenzoic Acid in Treatment of Arthritis—Service reports his experience in the treatment of eighteen cases of arthritis—acute, chronic rheumatic, gonorrheal, atrophic and hypotrophic—with the ammonium salt of *o*-iodoxybenzoic acid The solution was prepared not more than fifteen minutes prior to injection, and in all cases injection was made in the cubital vein The amount injected and the time required for injection depended largely on the case and the severity of the reaction to the drug In the earlier cases 0 5 Gm doses were used and from fifteen to thirty minutes taken for the injection, while in the later cases larger doses of usually 1 Gm were used and from five to ten minutes taken for the injection The injections were given at intervals of from three days to a week or longer apart, and all patients were confined to bed for the injection and for at least six hours afterward Immediately following the injection, a hot magnesium sulphate pack was applied at the site of injection for a period of six hours The most striking result of the treatment was the prompt relief of pain The next most striking result was the relief of muscle spasm Swelling was, as a rule, the most difficult symptom to relieve In a majority of the cases, especially those of gonorrheal origin, the swelling remained for some time after complete relief of pain and muscle spasm Subsequent doses of the drug served to reduce the swelling The drug produced a general leukocytosis, chiefly in the polymorphonuclear cells The red blood cell count as a rule was not materially affected After several injections there was usually a slight decrease in the number of red blood cells There was usually a slight rise in temperature following the injection of the drug, but this returned to normal within a few hours Acute joint infections are most responsive to treatment The removal of foci of infection and general hygienic care are to be used in conjunction with the drug in the treatment

Johns Hopkins Hospital Bulletin, Baltimore

42 1 65 (Jan) 1928

Vacciniform Blepharitis Due to Atypical Herpes Virus H B Andervont and J S Friedenwald Baltimore —p 1
*Heart in Mushroom Poisoning A S Hyman New York —p 8
Area Frontalis of Cerebral Cortex of Cat Controls Postural Reflex O R Langworthy Baltimore — p 20

Vacciniform Blepharitis Due to Atypical Herpes Virus — The eruption on the eyelids in the case reported by Andervont and Friedenwald in no way suggested herpetic infection and except for the history of previous vaccination would have been regarded as a typical example of accidental infection with vaccine virus From this case a virus was obtained which, when inoculated into rabbits, produced lesions and symptoms similar to those produced by the herpes virus Animals surviving infection with this virus were immune to typical strains of herpes virus This strain, however, exhibited a difference from other strains of herpes virus in that the intracranial infection of rabbits could be elicited only after a long series of corneal passages

Heart in Mushroom Poisoning —A case of *Amanita phalloides* poisoning presenting cardiovascular symptoms has been studied by Hyman by graphic and other methods Electrocardiographic examination revealed changes usually ascribed to right bundle-branch block An irregularity in the pulse was found to be due to right ventricular extrasystoles

Journal of Infectious Diseases, Chicago

42 1 92 (Jan) 1928

Protein of Egg White Their Relationship to Blood Proteins of Domestic Fowl as Determined by Precipitin Reaction L Hektoen and A G Cole Chicago —p 1
Skin Reactions in Rheumatic Fever (Birkhaug Test) A D Kaiser Rochester N Y —p 25
Specific Precipitin Reaction of Muscle Hemoglobin of Dog L Hektoen Chicago F S Robscheit Robbins and G H Whipple Rochester N Y —p 31
Erysipelas VII Standardization of Erysipelas Streptococcus Antitoxin on Man K E Birkhaug Rochester N Y —p 35
Surface Colony Types of Cl Botulinum on Blood Agar P Schoenholz San Francisco —p 40
Effect of Concurrence on Typhus and Rocky Mountain Spotted Fever Infections in Guinea Pigs F Breinl Prague Czechoslovakia —p 48
Specificity of Scarlet Fever Streptococci S I Zlatogoroff and W S Derkatch Ukrania U S S R —p 56
Metabolism of Abortus Melitensis Group II Nitrogen Metabolism J G McAlpine and C A Slanetz Storrs Conn —p 66
Id III Glucose Utilization J G McAlpine and C A Slanetz Storr Conn —p 73
Successful Cultivation of Gonococcus on Blood Agar Plates R D Herrold Chicago — p 79
Comparison of B Chauvoei Strains from Cattle and Sheep E Jungherr Bozeman Mont —p 84

Skin Reactions in Rheumatic Fever —Eight hundred children from 1 week to 16 years of age were tested intradermally with 0 1 cc of a 1 100 dilution of the toxic filtrate from cultures of the nonmethemoglobin-forming streptococcus isolated by Birkhaug from cases of rheumatic fever Approximately 32 per cent of all the children tested reacted positively to the test Separating the results into groups, Kaiser found that 20 per cent were positive when there was no history of rheumatic infection or of repeated attacks of sore throat, 35 per cent were positive when there was a history of repeated attacks of sore throat, and 72 per cent were positive when there was a history of rheumatic infection There is no parallel reaction with the Schick or the Dick tests It has not been definitely ascertained whether a positive Birkhaug test indicates a susceptibility to infection with the streptococcus isolated from rheumatic fever, or whether it is an allergic phenomenon of a specific nature similar to the tuberculin test The results with the Birkhaug test suggest that a positive skin reaction justifies the conclusion that a definite biologic relationship exists between the toxin produced by the nonmethemoglobin-forming streptococcus (Birkhaug) and the hypersensitive state of the skin of persons stigmatized by rheumatic infection These studies are in complete agreement with Birkhaug's original results with the toxin isolated by him

Specificity of Scarlet Fever Streptococci —Toxins produced by seventeen strains of scarlatinal streptococci and thirteen strains of nonscarlatinal streptococci were studied by Zlatogoroff and Derkatch By application of the Dick test twelve strains of scarlatinal streptococci out of seventeen proved toxic, or filtrates of these broth cultures diluted 1 2,000 caused a positive skin reaction, and five proved slightly toxic As to thirteen cultures of streptococci of other origin, six proved toxic, four showed a weak toxicity and three were atoxic Using the scarlatinal streptococcic toxin on patients at the onset of scarlet fever, they obtained positive Dick reactions in 35 7 per cent In the early convalescents there were positive reactions in 33 7 per cent and in patients late in the disease there were positive reactions in 50 6 per cent Nonscarlatinal streptococcic toxin used for the Dick test in patients who had freshly contracted the disease caused positive reactions in 12 5 per cent, when used in early convalescents 20 8 per cent gave positive reactions, and in patients late in the disease, positive reactions occurred in 44 6 per cent The Dick reaction was positive in nineteen of twenty three cases of scarlet fever with lymphadenitis, in six of seventeen cases with nephritis, and in three of five cases of scarlet fever associated with otitis purulenta Similar results were obtained with the nonscarlatinal streptococcic toxin Substances producing the phenomenon of extinction (Schultz Charlton) were obtained by immunization with scarlatinal as well as nonscarlatinal streptococci Scarlatinal serums gave the reaction of flocculation (precipitation) with toxins of streptococci derived from various pathogenic sources These observations do not confirm the conception of the specificity of scarlet fever streptococci

Journal of Urology, Baltimore

19 1 94 (Jan) 1928

Practical Value of Chemical Analysis of Blood in Urologic Conditions C G Bandler and J A Killian New York —p 1
*Aspiration of Testis in Diagnosis and Prognosis of Sterility M Huhner New York —p 31
Biochemical Studies of Prostatovesicular Secretions J F McCarthy C T Stepita M B Johnston and J A Killian New York —p 43
*Vasoligation Preventive of Epididymitis Before and After Prostatectomy E P Alyea Baltimore —p 65
Gradual Decompression of Bladder with Ureteral Catheter W W Scott Baltimore —p 81
*Acute Anterior Gonorrheal Urethritis Cured with Acriflavine M L Boyd Atlanta Ga —p 89

Diagnosis of Sterility in Male —Huhner insists that operation for the relief of male sterility should not be undertaken until aspiration of the testis has first been performed In the most hopeless cases of azoospermia, spermatozoa can be found on aspiration in about 40 per cent of the cases

Prevention of Epididymitis by Vasoligation—Alyea advises vasoligation as a routine in all cases of prostatic obstruction at the time of the patient's admission to the hospital and before urethral instrumentation or the insertion of a retention catheter In fifty cases of prostatectomy in which ligation was done, epididymitis occurred in four

Treatment of Gonorrheal Urethritis with Acriflavine—With a 1 1,000 aqueous solution of the English preparation (Boots) of acriflavine, Boyd has been able to control acute gonorrheal urethral infections completely, provided the treatment is begun before the infection has reached the posterior pendulous or bulbous portion of the urethra Two injections are made daily, one in the morning and one in the late afternoon, and no other medication is used during the first week unless the patient is given some mild urinary sedative. After voiding the patient lies down and about 1 or 2 drachms (3 75 or 7 50 cc) of the solution is injected into the urethra This is held in with pressure, exerted by the forefinger and thumb, on the urethra back of the glans A piece of absorbent cotton of a good grade and about 1 inch wide and 3 inches long is then laid over the meatus, with its ends carried back above and below the penis, and the pressure on the urethra is released, around the penis is wrapped another similar piece of cotton, and the patient is kept lying on the table for from ten to fifteen minutes with the penis held upright By the end of that time nearly all of the acriflavine has oozed out of the urethra into the cotton Usually after the first injections of acriflavine there is a marked improvement. The discharge often disappears in twenty-four hours Rarely is there any evidence of activity after forty-eight hours In most cases the gonococci have disappeared from the discharge after twenty-four to forty-eight hours After six or seven days the acriflavine treatments are stopped and irrigations of warm, weak, potassium permanganate (2 grains, or 0 13 Gm, to a quart) are given once or twice a day At home the patient employs a urethral injection of either a 5 per cent aqueous solution of neosilvol or a 1 per cent aqueous solution or strong silver protein

Kansas Medical Society Journal, Topeka

28 1 36 (Jan) 1928

Use of Iodides in Goiter V E Chesky Halstead—p 1
Coronary Occlusion Case C E Coburn Kansas City—p 4
Suicides K. A Menninger, Topeka—p 6
Diagnosis and After Treatment of Severe Infections of Hand S L. Koch Chicago—p 10
Nephrolithiasis W J Aldrich Independence—p 17
Bile Tests on Blood M Dupray Hutchinson—p 17
Infections of Upper Respiratory Tract O S Gilliland Kansas City, Mo—p 19

Kentucky Medical Journal, Bowling Green

26 1 48 (Jan) 1928

Importance of Cystitis as Symptom of Surgical Lesions of Urinary Tract. S C McCoy Louisville—p 4
Pulmonary Tuberculosis J A Britton Chicago—p 6
Ruptured Appendix with Extensive Peritonitis When Shall We Operate? F A Jones Paducah—p 8
Focal Points of Infection Producing Toxemia H H Roberts, Georgetown—p 10
Diagnosis and Localization of Spinal Cord Tumors L K Baldauf Louisville—p 14
Stenosis of Alimentary Canal Cases G Sherrill Louisville—p 21
Scarlet Fever J W Bruce, Louisville—p 29
Pertussis P F Barbour Louisville—p 34
Cancer of Lingual Tonsil S G Dabney Louisville—p 38
Eye Strain as Cause of Headache J F Dunn Arlington—p 42

Medical Journal and Record, New York

127 57 116 (Jan 18) 1927

Sclerotic Blood Vessels of Female Genitalia as Cause of Gynecologic Symptoms and Reason for Failure of Conservative Pelvic Surgery C L. Larkin Waterbury, Conn—p 57
Senescence and Senility L Williams London—p 62
Outstanding Events in History of Pulmonary Tuberculosis W P Nolan, Staten Island N Y—p 64
Value of Iodine in Nose and Throat Affections W H Porter New York—p 67
Diathermy in Pneumonia and Its Sequelae A A Lilien and J Echtman New York—p 68
National Traits in Medicine with Special Reference to Jew H A Savitz Providence R I—p 70
Stomatology in Relation to Prosthetic Dentistry L Ottofy Chicago—p 73
Medical Photography Practical Considerations H Goodman New York—p 76
Evaluation of Renal Function Tests G J Eckel K G Mowat and W H Krombein Buffalo—p 79
Role of Urology in Present Day Medicine W J Ezickson Philadelphia—p 82
*Comparison of Precipitation Test with Complement Fixation Test in Serum Diagnosis of Syphilis Based on 2 447 Tests J W Smith Jr New York—p 84
Use of Diathermy in Acute and Chronic Gonorrhea L. L Michel New York—p 87
Suppurative Pericystitis G Greenberg New York—p 89
Contracture of Vesical Neck S E Kramer Perth Amboy N J—p 92
Maimonides as Portrayed in Scott s Talisman L J Bragman Syracuse, N Y—p 95
Wonders of Obstetric Science Related by Simon Goulart C G Cumston Geneva Switzerland—p 96 C td

Comparison of Complement Fixation and Precipitation Tests—On a basis of 117 disagreements in a total of 2,447 tests, Smith says that the complement fixation test and the precipitation test for the serum diagnosis of syphilis as done in the second corps area laboratory, in accordance with the standard methods of the United States Army, agree in 95 23 per cent and disagree in 4 77 per cent of cases The percentage of false positives was Kahn, 1 47, Craig, 1 10

Nebraska State Medical Journal, Norfolk

13 1 40 (Jan) 1928

*Aberrant Appendix A I McKinnon Lincoln—p 1
Otitic Brain Abscess Case. E B Brooks Lincoln—p 4
*Diabetes Mellitus in Infancy and Childhood H B Morton, Doniphan—p 9
Child Nutrition Work in Lincoln Public Schools M J Breuer, Lincoln—p 12
Anus (Applied Anatomy) R R Best Omaha—p 17
Thrombo Angiitis Obliterans A E Cook Randolph—p 19
Edema of Brain and Eclampsia Neonatorum in New Born F Clarke Omaha—p 20
Case of Otomycosis F L Wilson Stuart—p 21

Aberrant Appendix—McKinnon is convinced that the high mortality of appendicitis is due to the physician's failure to diagnose an acute inflammation of an aberrant appendix Five cases are reported.

Diabetes Mellitus in Infant—Morton reports a case of diabetes mellitus in an infant aged 12 months in whom treatment with insulin was entirely successful

New Jersey Medical Society Journal, Orange

25 1 82 (Jan) 1928

*Serum Treatment of Disease by Intravenous Injection G T Spencer Elizabeth—p 1
*Principles of Intravenous Medication in Biologic and Chemotherapy J A Kolmer, Philadelphia—p 4
Treatment of Pneumonia with Pneumococcus Antibody Solution F M Huntoon Swartmore Pa—p 9
*Dye Therapy of Acute Infections K A Kilduffe Atlantic City—p 13
Therapeutic Value of Blood Transfusion J W Gray Newark—p 17
*Pernicious Anemia F M Allen Morristown—p 22
Operative Treatment of Duodenal Ulcer F J McLoughlin Jersey City—p 26

Serum Treatment of Disease—Spencer emphasizes the fact that the present chief objection to intravenous serotherapy is the possibility of the occurrence of an acute anaphylactic reaction even before the injection is completed A physician may give thousands of intravenous serum treatments with few or no consequences, but once he has experienced the clinical picture presented by the sudden collapse of a patient almost into, or actually into death itself, he will hesitate long before inviting in any way a possible repetition of such an event It is the shock type of reaction which leads even enthusiastic advocates of intravenous serum medication to admit that the slower routes of administration are preferable if satisfactory therapeutic results may thereby be attained

Principles of Intravenous Medication—Kolmer discusses intravenous therapy from all angles He says that intravenous medication should *never* be the method of choice if subcutaneous, intramuscular or oral routes of administration are possible and meet the requirements As a general rule intravenous injections are indicated under grave circumstances, in acute conditions and emergencies, or when the medicament is of such a nature that it cannot be otherwise administered

Dye Therapy of Acute Infections—Kilduffe feels that the rather empiric use of one or two dye compounds in arbitrary dosage based mainly on body weight must be replaced by some more rational plan to be evolved from the cooperative efforts of the laboratory worker and the clinician He pleads that the resort to intravenous therapy by dye compounds should not be left until the patient is in a moribund condition

Liver Feeding in Anemias—In nonpernicious cases of anemia, Allen has had better results from liver feeding when salt was excluded from the diet He cites a number of cases in point

New York State Journal of Medicine, New York

28 59 120 (Jan 15) 1928

*Dangers of Metastases from Incomplete Removal of Malignancies of Skin A R McFarland Rochester —p 59
Doctor and Insurance Adjuster A L Hall Fulton —p 61
Does Psychiatry Need Help? H G Matzinger Buffalo —p 64
Dangers of Surgical Movies and How to Avoid Them J Sarnoff, New York —p 67
Problems of Adolescence H J Cronnin and E A Sullivan Cambridge, Mass —p 69
*Erect Percussion Pain Method of Abdominal Diagnosis L W Kohn, New York —p 75
Examination of Contents of Abdomen by Ausculatory Percussion E M Moshur New York —p 77
Recorded Causes in 500 Stillbirths in New York City L W Nathan and G J Drolet New York —p 78
Treatment of Toxemias of Pregnancy H J Stander Baltimore —p 80
Pupil in Diagnosis T H Curtin New York —p 85

Pigmented Carcinoma with Metastases—McFarland reports six cases of pigmented carcinoma in which extensive metastases occurred after removal or attempted removal of the primary tumor He urges that great caution should be used in treating pigmented lesions of the skin If it is decided that a certain lesion should be removed, it should be destroyed very thoroughly and not irritated by ineffectual methods of treatment

Erect Percussion in Abdominal Diagnosis—Kohn endorses the value of percussion of the abdomen with the patient in the erect position as first proposed by Ehrlich in 1923 The patient is unable to protect the tender area through the medium of abdominal muscular contraction, and the transmission of an impulse to a diseased focus by percussion is far more satisfactory when the patient stands erect than when he is lying down Especially is this true of the upper part of the abdomen In the erect position, the organs of the upper abdomen uncover themselves to a certain extent This is especially true in the atonic abdomen Valuable information may be gleaned from the degree and extent of the sensitiveness of a segment, and it is from such information that intelligent conclusions should be formulated Finally, it must be emphasized that this method of diagnosis is said to find its particular field of application in ascertaining the existence of a tender abdominal organ whose impressions are transmitted to a certain segment

Physical Therapeutics, Baltimore

45 *559 614 (Dec) 1927*

Use of Artificial Chemical Light Especially in Tuberculosis A Reyn Copenhagen Denmark —p 559
Electrothermic Methods in Treatment of Inoperable Cancer of Breast W H Schmidt Philadelphia —p 569
Radiant Energy and Protoplasmic Action E N Kime Indianapolis —p 581

Public Health Reports, Washington, D C

43 1 53 (Jan 6) 1928

Food of Culicine Larvae Food Organisms in Pure Culture M A Barber Washington D C —p 11

43 55 110 (Jan 13) 1928

Scarlet Fever Prevention and Control J W Schereschewsky and R E Dyer Washington D C —p 57

Virginia Medical Monthly, Richmond

54 607 676 (Jan) 1928

Life of Lord Lister E J Horgan Washington D C —p 607
Cancer of Colon and Rectum J S Horsley Richmond —p 612
Tabloid Dip into History F Hancock Norfolk —p 617
Then and Now Z V Sherrill *Marion —p 624*
Glaucoma W T Davis Washington D C —p 628
Some Little Recognized Causes of Chronic Symptoms R L Raiford *Franklin —p 636*
Methods of Improving Mining Camp Sanitation from Standpoint of Industrial Medicine J G Bentley Blackwood —p 638
Tuberculous Meningitis in Infancy and Childhood Twelve Cases N W Sisson New York —p 640
Necessity for Careful Preoperative Medical Examination of Surgical Patients Recognition of Postoperative Medical Complications B P Seward, Richmond —p 644
Why County Medical Society? C G Greear, Honaker —p 648
Frequency of Tuberculous Involvement of Right Lung L M Hines Sanatorium —p 649
Treatment of Abnormal Obstetrics at Lying In Hospital of New York City H Sutelan Norfolk —p 652

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below Single case reports and trials of new drugs are usually omitted

British Medical Journal, London

1 39 82 (Jan 14) 1928

Early Detection and Supervision of Rheumatic Infection in Children G A Allan —p 39
Field Vision and Near Vision F Fergus —p 42
Plea for National Laboratory for Study of Mental Abnormality K J A Berry —p 46
*Treatment of Lupus Vulgaris J Beatty —p 47
Case of Erythro Edema or Pink Disease D I Currie —p 48
Series of Consecutive Operations on Mastoid J A Gibb —p 49
*Etiology of Leukemia H M Woodman —p 50
*Foreign Body in Bladder A R Thompson —p 51
*Intestinal Obstruction in Infant E A C Wilson —p 51
Novel Hemostat A Hopkins —p 52
Vesical Bilharzia Double Infection with S Hematobium and S Mansoni H Fairbairn —p 52
Acute Pneumonia Treated by Sodium Nucleinate P S Hichens and R E Gibson —p 52

Treatment of Lupus Vulgaris—The application found most generally useful by Beatty in the treatment of lupus vulgaris is a potassium-phenol mixture In a 4 cc wide-mouthed sample bottle stoppered by a rubber cap is placed 2 5 cc of a solution of potassium hydroxide (1 part to 2 parts of water) in which is suspended precipitated calcium carbonate (1 part) and 1 5 cc of phenol (carbolic acid) A pencil of cotton wool wrapped round the point of a forceps is dipped in the fluid and the area rubbed As the rubbing is continued, the lupus nodules start out as purple spots, and nodules not previously noted can be detected When these purple spots are well marked, the application is stopped, if it is continued, the whole area will turn a purplish black A piece of unmedicated lint is cut the size of the area of disease, and on this is placed a fairly thick coating of a paste consisting of equal parts of salicylic acid, sodium salicylate and cane sugar, with enough glycerin to make a soft paste This is applied to the area treated and the whole covered with zinc oxide adhesive plaster, which overlaps for some distance on all sides so as to make an impervious dressing The application is repeated twice a week, in most cases for four weeks, though not so long in superficial cases On the removal of the first dressing a granulating surface is found no lupus nodules being visible, but if the wound were allowed to heal some nodules would be found Repetition of the treatment is therefore necessary but after the first treatment, touching with the alkaline phenol or slight rubbing only is required No sign of phenol poisoning has occurred The treatment fails when the impervious dressing cannot be properly applied—for example, on the nose or close to the eye In these areas it must be supplemented by acid nitrate of mercury or another powerful caustic, or, perhaps, by ultraviolet rays It does, however, prepare the way for these by reducing the number of nodules

Etiology of Leukemia—Woodman concludes from his analysis of twenty-five cases that leukemia is a condition which runs a course parallel in many striking respects with that of an acute or chronic infective process, and that while there are clearly some unexplained resemblances to tumor formation (particularly if myelomas and chloromas are included under the heading of leukemia), we must await further light on the whole problem of the etiology of tumors, this in turn will reveal the relation between the two conditions

Foreign Body in Bladder—In one of Thompson's patients a metal thermometer case, minus the lid and about 3 inches long, was removed from the bladder Two plum stones were removed in a second case Other articles removed were a collar stud, pieces of broken bougies and the end of a catheter

Intestinal Obstruction in Infant—In Wilson's case a band-like adhesion due to intra-uterine peritonitis led to an operation for intestinal obstruction in a 3 day old infant The obstruction was of the jejunum

Lancet, London

1 63 114 (Jan 14) 1928

Education of Medical Officers for Service in Tropics A Balfour—p 63
Medical Practice in England S Hastings—p 67
Hemangioma J J M Shaw—p 69
Curative Action of Hydnocarpates and Iodides in Leprosy L Roger—p 73
*Use of Tuberculin in Pulmonary Tuberculosis Dreyer s Diaplyte W C Bosanquet—p 74
*Schick Test and Immunity to Diphtheria R Cruickshank—p 76
Mortality of Operations on Enlarged Prostate H Edwards—p 77
Case of Cerebellar Glioma A G Yates—p 78
*Case Resembling Addison s Disease Treated with Pituitary Extract E C B Ibotson—p 79
Case Presenting Clinical Picture of Congenital Heart Disease with Contrary Pathologic Findings N F Pearson—p 79
Treatment of Diphtheria Carriers P Bousfield—p 79

Use of Tuberculin in Pulmonary Tuberculosis—Bosanquet believes that tuberculin may sometimes be of use in (1) patients who exhibit a persistent mild pyrexia in spite of continued rest in bed, (2) those who have no fever while resting, but suffer repeatedly from a slight return of pyrexia on rising and moving about, and (3) early cases showing slight laryngeal involvement Prophylactic injections of tuberculin might also perhaps be given advantageously to delicate subjects with bad family histories The initial dose which he employs, using Koch s tuberculin is 1/100 000 mg of solid bacterial content, followed by 1/75 000 1/50 000 mg and so on in a febrile case, raising the dose more quickly in the absence of fever and in early cases Dreyer s tuberculin is more concentrated, as the inert fatty matter has been removed and the solid material left is theoretically all active substance Bosanquet uses an initial dose of 1/200 000 mg and this can be raised slowly or quickly in accordance with the type of patient When a satisfactory dose has been reached, resulting in normal temperature and general improvement, it is best to repeat it, at all events for several ensuing injections as it appears doubtful whether any advantage is gained by raising the dose indefinitely The first trial injections may be given at intervals of five or seven days Afterward, the intervals may be determined by the effects produced Thus, when an injection causes a preliminary fall of temperature, which tends to rise again some days later the time of such rise may indicate the need for another dose After an injection, an immediate rise of temperature of more than 1 degree F usually suggests a diminution of the dose given in any case it contraindicates any increase The patient should remain in bed, and so far as is possible at complete rest, during the first two or three months of the treatment, so that no avoidable disturbance may vitiate the strict observation and record of the results obtained

Schick Test and Diphtheria Immunity—The testing of nurses by the Schick method, and the active immunization of those found to be susceptible to diphtheria has given satisfactory results, and has almost entirely eliminated the incidence of clinical diphtheria among the nursing staff of a large fever hospital in Glasgow

Mortality of Prostate Operations—The death rate in 126 cases of prostatectomy done by the Thomson Walker method was 8 7 per cent Four of these patients were operated on in two stages One patient died, a mortality of 25 per cent The remaining 122 patients were operated on in one sitting The mortality in this group was only 8 2 per cent There was only one death from hemorrhage among the whole series of 126 patients (less than 0 8 per cent) The mortality from operative shock was less than 0 8 per cent In two cases of death due to pyelonephritis the renal calices and pelves were dilated In three of four cases in which uremia was the cause of death sepsis played a part Sepsis and uremia together account for 60 per cent of the deaths following the one-stage operation Edwards feels that this relatively high mortality can be eliminated only by earlier operation The practice of 'cooking a prostate until it is bad enough for operation is strongly condemned

Use of Pituitary Extract in Addison's Disease—For three years Ibotson's patient had suffered from profound asthma and severe vomiting The skin was deeply pigmented everywhere her face was a chocolate color the hands were nearly black the chest, back and abdomen were all a deep chocolate and there was black pigment inside the mouth on the gums cheeks and tongue Ibotson concluded that she had Addison s disease There was no anemia or wasting and the urine was normal throughout She was given whole pituitary gland 2 grains (0 13 Gm) night and morning, with the idea of raising the blood pressure The patient became much stronger the vomiting ceased but the pigmentation remained the same She is still alive and keeping up and about

Medical Journal of Australia, Sydney

2 967 900 (Dec 24) 1927

Hemorrhage of New Born W L Crowther—p 875
Larva Migrans in Australia G R Hamilton and E W Ferguson—p 875
*Colossal Hydatid Cysts L E Barnett—p 878
Avitaminoses G C Willcocks—p 882

Colossal Hydatid Cysts—Barnett relates the case of a man aged 39 who, when 6 years of age, struck his abdomen against a projecting stone He suffered great pain at the time and was acutely ill in bed for three weeks From two to three years later, it was noticed that the abdomen had become a little swollen This swelling slowly and steadily increased by almost imperceptible degrees month by month and year by year However he felt well and was fit for his work herding sheep Finally his health failed rapidly He suffered continuously from pain in the abdomen and loins he became feverish, weak and obviously ill he could no longer ride and soon could barely walk His digestion was badly deranged the urine was passed with difficulty and in small quantities at a time The abdominal girth was 144 cm Believing this to be a case of ascites, Barnett inserted a fine trocar in the left flank but not a drop of fluid escaped He then inserted a trocar of 2 mm diameter and this time drew into the cannula unmistakable shreds of hydatid membrane Laminated ectocyst scolices and separate hooklets were all seen under the microscope Routine laboratory investigation confirmed the diagnosis The Casoni skin test yielded a positive response The complement fixation was strongly positive The eosinophil count was only 2 per cent A laparotomy was performed Eleven gallons of hydatid material was evacuated not counting a considerable quantity of fluid from burst cysts which soaked into swabs and towels and coverings Abdominal viscera could not be seen or felt they were all matted and crowded into obscurity behind an enveloping screen of fibrosed peritoneum The normal peritoneal cavity with its numerous folds and recesses was distended into a colossal sphere surrounded by a fibrocellular wall 3 mm in thickness and of a soft leathery consistency Its interior surface was finely granular The patient s weigh before operation had been 238 pounds (110 Kg) after operation it was 126 pounds (57 8 Kg)

Tubercle, London

9 157 204 (Jan) 1928

Treatment of Chronic Pleural Conditions in Tuberculosis J Grave n—p 157
Correlation of Calcium Metabolism Parathyroid Function and Pulmonary Tuberculosis P Ellman—p 162
After History of Sanatorium Treated Patients C O S B Brooke—p 167

Calcium Metabolism, Parathyroid Function and Pulmonary Tuberculosis—Nearly 100 estimations made by Ellman show that the calcium content of the blood in pulmonary tuberculosis is within normal limits (i e from 9 to 11 mg per hundred cubic centimeter) but this calcium content can b raised from the minimum content to the maximum with corresponding improvement in the patient s general condition by calcium or parathyroid therapy

Journal des Praticiens, Paris

41 833 848 (Dec 17) 1927

Premature Rupture of Membranes H Vermelin —p 833
Abscess of Right Iliac Fossa Attributable to Pott s Disease Delbet —p 837
*Acute Hydrocephalus Developing After Mumps A Guerin —p 839

Case of Acute Hydrocephalus Developing After Mumps —At the age of 3 months Guerin's patient presented a bulging forehead, a fontanel larger than normal and a large head At 6 months he contracted mumps One month later, the Kernig sign appeared, with projectile vomiting and stubborn constipation With treatment the child recovered, but relapsed and at the sixth month of the disease had a confirmed hydrocephalus A febrile attack with a convulsion terminated life

Paris Medical

63 489 520 (Dec 17) 1927

New Technic of Respiratory Gymnastics. P Tissie.—p 489
Manual Examination of Subcutaneous Layer Durey —p 498
*Role of Physical Therapy in Treatment of Salpingo Ovaritis H Dausset and A Chenilleau —p 499
*Physical Therapy of Sciatica L Gerard —p 505
Attempted Classification of Phenomena of Photosensitization L Marceron —p 511

Rôle of Physical Therapy in Treatment of Salpingo-Ovaritis —Physical therapy of salpingo-ovaritis is valuable if instituted early Dausset and Chenilleau were able to suppress all pain in 50 per cent of 600 patients treated and to fit them to return to an active life Heliotherapy and irradiation with the arc lamp are treatments of choice in tuberculous salpingitis Diathermy and hydrotherapy, combined with vaccines induce speedy cure or at least, improvement in cases of salpingitis which would otherwise necessitate long months of rest and an operation Operation should be done only after from one to three months of physical therapy

Physical Therapy of Sciatica —Before treating sciatica the cause should be determined If there is funiculitis or radiculitis radiotherapy should be used If there is myalgia, hydrotherapy is the method of choice For neuralgia the high frequency current or galvanization are effective Gerard recommends general hydrotherapy and light baths for patients with chronic rheumatism

Schweizerische medizinische Wochenschrift, Basel

57 1161 1184 (Dec 3) 1927

Puerperal Gas Gangrene Guggisberg —p 1161
History of Use of Squill H Scheer and H E Sigerist —p 1168
Active Principle of Squill A Stoll —p 1169
Pharmacology of Squill E Rothlin —p 1171
*Roentgen Ray Treatment of Tuberculous Adenitis E Wyss and A Eghiayan —p 1172
Work of Goiter Commission O Graeniger —p 1176
Subcutaneous Neuromyo Arterial Glomus and Its Tumors J L Nicod —p 1177

Roentgen-Ray Treatment of Tuberculous Adenitis —Treatment of tuberculous glands requires from three to twelve months and must be given in several series In general, the more recent the disease, the more speedy is the cure, without regard to the size of the tumor Early puncture of caseous or suppurating glands may be combined with irradiation and good results may be obtained in from four to twelve months In ulcerous, fistulous adenitis, roentgenotherapy can do much toward effecting a cure Estimates of the length of treatment vary from two to fifteen months With correct technic the danger of roentgen-ray scars is negligible For fibrous adenitis, roentgenotherapy does very little In 1,311 cases taken from the records of the authors and from the literature, the percentages of cure ranged from 66 to 91 There were local recurrences in 8 or 9 per cent Technic, indications and contraindications are other phases of this subject studied

57 1185 1208 (Dec 10) 1927

Forensic Importance of Sequelae of Epidemic Encephalitis R Bing —p 1185
*Roentgenologic Picture of Chronic Appendicitis A Fonio —p 1189
*Traumatic Subcutaneous Rupture of the Intestine W Lauterburg —p 1200
Scrofulous Diseases of the Eye L Steiner —p 1201

Roentgenologic Picture of Chronic Appendicitis —During several years Fonio has submitted all his patients with chronic appendicitis or with symptoms after earlier attacks of appendicitis to roentgenographic examination The examination takes place twelve hours after ingestion of the contrast meal In all these cases delayed emptying of the cecum and ascending colon was demonstrated He suggests two explanations for the lessened motility of this part of the intestine involvement of the serous coat of the intestine in the peritoneal inflammation and weblike adhesions around the cecum The cecum is by nature predisposed to sluggishness

Traumatic Subcutaneous Rupture of the Intestine —Lauterburg reports a case of transverse rupture of the ileum 59 cm above Bauhin's valve in a boy, aged 7 The injury was caused by a comparatively slight trauma, the child being thrown against the projecting edge of a wooden sled while sledding Symptoms of peritonitis appeared after twenty-four hours The child recovered after operation In another case, rupture of the stem of the spleen followed a fall in which the upper abdomen struck against a log of wood At operation, which took place more than twenty-four hours after the accident, a large hematoma was found The child recovered

57 1233 1256 (Dec 24) 1927

Dilation of Esophagus Under Guidance of Thread M E Settelen —p 1233
*Tuberculosis of Esophagus as Cause of Death H J Schmid —p 1235
Physical Chemistry in Study of Cancer A de Coulon —p 1236

Tuberculosis of the Esophagus as Cause of Death —The tuberculous ulcer in this case had its origin in a caseous mediastinal lymph gland which ruptured into the esophagus Tuberculosis of the esophagus is rare, and it is still more rare, Schmid states, to find it in the center of the pathologic picture

Policlinico, Rome

34 1849 1888 (Dec 19) 1927 Practical Section

Suppurative Meningitis in Tabes G Pilotti —p 1849
*Vaginal Tampon R Carnelli —p 1853

Quickly Prepared Vaginal Tampon —For quick vaginal tamponade in cases of uterine hemorrhage in cancer, miscarriage and placenta praevia, Carnelli has used successfully for twenty years a piece cut off from a sterile gauze roll Its length should be from 2½ to 3 inches to fit the vagina

Riforma Medica, Naples

43 1209 1232 (Dec 19) 1927

*Antigens for Wassermann Test G Molinari —p 1210
Large Abdominal Endothelioma A Jona —p 1212

Phenol as a Substitute for Lipoids in the Spinal Fluid Wassermann Test —In thirty-five cases of various spinal diseases, the phenol-alcohol antigen was tested against three lipoid antigens in making the Wassermann test The results agreed absolutely All (12) fluids positive with the lipoid antigens were also positive with the phenol-alcohol The negative results were also identical

Brasil-Medico, Rio de Janeiro

41 1247 1280 (Nov 26) 1927

*Blood Coagulation V Brasil —p 1247
Unilateral Paralysis A Torres —p 1256
Primary Diphtheric Conjunctivitis T Falcão —p 1259

Blood Coagulation in Disease —In some diseases, such as syphilis, pemphigus, leishmaniasis and cancer, the coagulating power of blood serum was found to be considerably decreased Increased coagulating power was noted in typhoid and plague In still other conditions, such as hookworm disease and malaria, there was little change. In leprosy, the results were indefinite Of the various substances tested, glucose, neoarsphenamine and tartar emetic proved to be inert Others, such as bismuth, manganese, sodium, tapioca and calcium chloride raised the coagulating power Iron copper, lead and a weak solution of mercuric chloride decreased it Sodium citrate and sodium oxalate act peculiarly, as they increase the coagulating power in vivo in the serum, but they lower it in vitro in the plasma

Prensa Medica Argentina, Buenos Aires

14 649 688 (Nov 20) 1927

*Serum Therapy of Scarlet Fever M R Castex and H D Gonzalez —p 649
*Ether Enemas I Imaz —p 673

Serum Therapy of Scarlet Fever —From May, 1926, scarlet fever antiserum has been tried in Buenos Aires in 250 cases of scarlet fever of all types and conditions In general, the result was excellent In simple scarlet fever cases treated with serum, complications developed in only 4 7 per cent and the death rate did not exceed 5 per cent The situation changes when other infections supervene In cases associated with diphtheria, the mortality reached 65 per cent and in those with measles, 100 per cent Bacteriologic examination disclosed 24 and 76 per cent of mannite fermenting and nonfermenting streptococci, respectively

Ether Enemas as Sedatives —In patients with severe colics as, for instance, from gallstones, small oil-ether enemas prove useful The dose is from 5 to 10 Gm in twenty-four hours The formula includes ethyl ether, 5 Gm, olive oil, 60 Gm, laudanum, 10 drops Proctitis developed in only one case

Revista de Medicina y Cirugia de la Habana, Havana

32 779 806 (Nov 25) 1927

*Pulmonary Mycoses N Puente Duany G Aldereguia and J Garcia Alvarado —p 779
Congenital Malformation of Heart N Puente Duany and R Mathieu —p 797

False Pulmonary Tuberculosis Caused by Mycosis —Two cases of pulmonary mycosis were mistaken for cancer and tuberculosis, respectively In one case a diagnostic pneumothorax was attempted Then multiple abscesses occurred in the upper thorax and neck and the sections revealed typical actinomyces

Semana Medica, Buenos Aires

34 1553 1628 (Dec 8) 1927

Facial Paralysis in the New Born J M Jorge and A M Centeno —p 1553
Prevention of Measles by Use of Serum A Zubizarreta —p 1557
*Aortic Aneurysm J R Goyena and A Dagnino —p 1560
Ileus Caused by Gallstones D del Valle and R E Donovan —p 1566
Syphilis of Lung in Children J C Navarro and E A Beretervide —p 1567 C cn
*Combined Gastric and Duodenal Ulcer P Schlanger —p 1573
Spontaneous Tuberculosis J Ferran —p 1578
Uterine Fibromyomas with Pregnancy E T Lastra and J Bazan —p 1583
Infant Mortality at Rosario P P Pinero Garcia —p 1586
Electric Tongue Depressor C. Citrino —p 1612
Use of Creosoted Air in Pneumothorax Barralt —p 1614

Bismuth in the Treatment of Aortic Aneurysm —In a patient with a history of syphilitic infection and a positive Wassermann test an aortic aneurysm developed The condition advanced, in spite of various methods of treatment, including mercurials The case seemed desperate when injections of metallic bismuth were started Improvement was almost immediate The aneurysmal shadow also decreased in size and the Wassermann test became negative

Coexistence of Gastric and Duodenal Ulcers —In three out of four cases of combined gastric and duodenal ulcer, the accuracy of the previous roentgen-ray diagnosis was confirmed at operation The gastric lesion was invariably the smaller and apparently the more recent

Archiv fur Gynakologie, Berlin

131 171 424 (Nov 22) 1927

*Blood Groups H Lutzeler —p 171
Blood Groups and Paternity H Merkel —p 188
Influence of Acetylene Anesthesia on Parenchymatous Organs W Schmitt and E Letterer —p 203
Injuries to Infant s Mouth in Self Conducted Deliveries E. Marz —p 234
Persisting Deep Transverse Presentation P Schumacher —p 262
Posterior Lobe of Pituitary in Pregnancy Labor and Puerperium H Kustner and H Biehle.—p 274
Phosphoric Acid in Serum of Pregnant Women A Bock —p 287
Influence of Menstrual Cycle on Adnexal Inflammations F C Geller and W Sommer —p 293
Cyclic Changes in Tubes W Butomo —p 306
Fibroma Ovarii Adenocysticum O Frankl —p 325
Cancer Metastases M I Maljeff —p 339
Position and Extent of Heart and Lung in Pregnancy and Puerperium. F Klaften and J Palugyay —p 347
*Experimental Tuberculosis of Female Genital Organs G Bakacs —p 364
Hemoglobin Resistance in Gynecology and Obstetrics E Kittler —p 389
True Endometritis H Hartmann —p 405
Transformation Zone of Portio H Hinselmann —p 422

Blood Groups and Disease —Lützeler s researches on the blood of about 700 patients with arteriosclerosis tuberculosis, syphilis or cholelithiasis did not indicate a particular predisposition of any blood group to any of these diseases

Blood Group Determination and Paternity —Merkel gives a table showing the possible and impossible blood groups of the child with the various combinations of blood groups in the parents, in accordance with Bernstein s schema In most cases in which mother and child belong to the same group, no aid as to paternity can be obtained from study of the blood grouping, exceptions are when mother and child belong to group 0 (Janski I, Moss IV), in which case a man of group AB (Janski IV, Moss I), cannot be the father, and when mother and child belong to group AB, in which case a man of group 0 can be excluded

Experimental Tuberculosis of Female Genital Organs —From experiments on rabbits, Bakacs concludes that primary, i e, ascending tuberculous infection of the female genital organs takes place by the lymph channels, if at all Secondary (hematogenous) infection was not seen with intact or with mechanically or chemically injured uterus Retrograde lymphogenous infection was shown to be possible

Deutsche medizinische Wochenschrift, Berlin

53 2107 2150 (Dec 9) 1927 Partial Index

Female Sex Hormone. L Fraenkel —p 2107
*Prospects of Internal Treatment of Gallstones W Lowenberg G Noah and G Scherk —p 2110
Treatment of Diseases of Biliary Tract A Rothacker —p 2111
Gastric and Intestinal Hemorrhages from Thrombosis of Splenic and Portal Veins W Block —p 2112
Osteotomy for Chondrodystrophic Deformities H Pick —p 2114

53 2193 2212 (Dec. 23) 1927 Partial Index

*Cure of Agranulocytic Angina by Roentgen Rays U Friedemann —p 2193
*Intracutaneous Inoculation with Living Tubercle Bacilli P Wichmann —p 2195
Causal Treatment of Chronic Rheumatism G Paul —p 2196

Prospects of Internal Treatment of Gallstones —One hundred and eighty-four patients were examined from two to seven years after the beginning of internal treatment for gallstones in Kuttner's clinic Thirty nine per cent were wholly or almost wholly symptom-free 21 per cent had constant and severe symptoms, 40 per cent suffered pain occasionally but were in general satisfied with their condition Of the uncured 80 per cent had kept to a more or less strict diet, while 75 per cent of those free of symptoms had not held to a diet

Gastric and Intestinal Hemorrhages from Thrombosis of Splenic and Portal Veins —Block reports a case in which a woman died from hemorrhages from the stomach and intestines two and one-fourth years after successful removal of a huge thrombophlebitic tumor of the spleen The cause of the hemorrhages was thrombosis of the splenic and portal veins He believes that splenectomy can at most halt the progress of thrombophlebitic processes and that patients thus treated should be reexamined after a length of time

Cure of Angina Agranulocytotica by Roentgen Rays —Healing followed roentgen irradiation of the long bones in four cases of angina agranulocytotica reported by Friedemann He thinks it probable that this disease is not an infection, but originates in endogenous disturbance, perhaps of endocrine nature

Results of Intracutaneous Inoculation with Living Tubercle Bacilli of Diminished Virulence —Sixty-three patients with tuberculosis of the skin, mucous membrane, lymph glands or lungs were inoculated subepidermally with 100 000 or 200,000 organisms Up to twenty-four injections were given at intervals of eight days or longer An infection of the lymph system was not seen Any important influence as regards retrogression and absorption of tuberculous infiltrates was not observed, but in a number of cases the inoculations seemed to check the progress of the disease and to make it more amenable to local treatment This favorable influence was very late in appearing

Klinische Wochenschrift, Berlin

6 2313 2360 (Dec 3) 1927 Partial Index

Pathogenesis of Acidotic Toxic Dehydration in Childhood H Seckel —p 2316
Cure of Warts by Suggestion B Bloch —p 2320 C cn
Treatment of Cardiac Edema C Oehme —p 2325
Importance of Gas Metabolism Research in Tuberculosis G Giegler —p 2326
Brain Antibodies in Syphilis F Georgi and O Fischer —p 2328
Leukocytes in Pernicious Anemia Especially in Blood Crises I Zadek —p 2330
Blood Groups in Upper Hesse H Kliewe and R Nagel —p 2332
Treatment of Inoperable Tumors H Kahn and H Wirth —p 2335
Method of Action of Insulin Injections in Fattening Treatment and Apparent Habituation to Insulin F Depisch —p 2338

Importance of Gas Metabolism Research for Tuberculosis —From Giegler's clinical investigations he concludes that there is a relation between gas metabolism values and many of the early stages of pulmonary tuberculosis In other stages there is considerable discrepancy Gas metabolism is unimportant in diagnosis and prognosis of pulmonary tuberculosis

Leukocytes in Pernicious Anemia, Especially in Blood Crises —Zadek gathered data on 200 cases of pernicious anemia, which he followed after discharge In general, leukopenia in this disease signifies a serious prognosis, increasing or physiologic values and hyperleukocytosis, on the other hand, with complications such as diarrhea, vomiting, pneumonia, etc, point to a favorable change of indefinite duration Leukopenia in the height of the attack and in the recurrences proves the severe, toxic-degenerative alteration of the bone marrow, especially in the granulocyte system while mounting counts for the leukocytes announce the efforts at regeneration of the blood forming apparatus

6 2361 2408 (Dec 10) 1927 Partial Index

Exciting Organism of Measles R Degkwitz —p 2364
Lipoid Cell Spleno Hepatomegaly of Niemann Pick Type B Brahn and L Pick —p 2367
Diagnosis and Contents of Pancreatic Cysts W Deutsch and H Grubel —p 2369
Fat Poor Diet in Diabetes D Adlersberg and O Porges —p 2371
Relations Between Vegetative Nervous System Hypercholesteremia and Arteriosclerosis F Glaser —p 2377
Ovarian Function in Menopause H Uiberall and E Urbach —p 2379
Colloid Shifting in Serum W Baer —p 2380
Permeability of Varieties of Glass for Ultraviolet Rays M Zimmermann —p 2384
Plantar Reflex in Infants J Schlesinger —p 2384

Treatment of Diabetes with Fat-Poor Diet —Adlersberg and Porges report another year's experience with their method In the lighter forms of diabetes the diet contains carbohydrate up to or beyond the limit of tolerance, the least possible fat, and protein to make up the required nourishment In the severer forms an abundance of carbohydrate, a moderate amount of protein and only so much fat as is necessary in the preparation of the food are given The excretion of sugar is kept down by administration of insulin In both classes of patients the weight is brought to normal by appropriate diet before the special diet is begun The authors cite a number of cases to show that carbohydrate tolerance increases on the fat-poor diet The increase, however, was found to have a definite limit and two cases proved refractory to treatment, possibly from nervous influences The results of the regimen was that patients became able to take a diet of approximately physiologic composition The acquired increase of tolerance was lost if the patients went back to a diet rich in fat and poor in carbohydrate and protein

Relations Between Vegetative Nervous System, Hypercholesteremia and Arteriosclerosis —Glaser demonstrated on eight subjects that in suitable persons excitation of the sympathetic by injections of epinephrine is followed by excess of cholesterol in the blood This together with the facts that there is a disturbance of cholesterol metabolism in arteriosclerosis and that emotional disturbances play a role in the etiology of the latter lead him to place cholesteremia as a link in the chain between conditions of excitement in the vegetative nervous system and arteriosclerosis

6 2409 2456 (Dec 17) 1927 Partial Index

Forssman s Antigen and Forssman s Antibody W Frei and S Grunmandel —p 2412
Physiology of Extrahepatic Bile Ducts K Westphal and W Schondube —p 2417
Acetone Index in Diabetics A Abraham and M Altmann —p 2419
*Technic and Method of Blood Group Determination H Sachs —p 2421
Brain Antibodies in Syphilis F Georgi and O Fischer —p 2423
*Calcium Ion Concentration in Pregnancy and Its Relation to Convulsions O Bokelmann and A Bock —p 2427
Chemical and Biologic Relations Between Thallium and Lead A Buschke and L Berman —p 2428
Fabism L Preti —p 2429
Moisture Excretion Through Intestinal Tract in Nephritis G Scherk —p 2432

Technic and Method of Blood Group Determination —Sachs recommends the use of sheep s blood antigens in blood group determinations

Calcium Ion Concentration in Pregnancy and Its Relation to Convulsions —Bokelmann and Bock are convinced that the dialyzable calcium is greater in the blood stream supplying the fetus than in the maternal venous blood The total calcium content, as well as the absolute value for dialyzable calcium in the blood serum of the umbilical vein is considerably greater than in the serum of the arteries of the umbilical cord leading from the fetus

6 2457 2480 (Dec 24) 1927 Partial Index

Tissue Metabolism in Organism Infected with Tuberculosis W Keller —p 2460
Ideal Exposure in Roentgenologic Examination of Lungs K Klingenstein —p 2462
Evaluation of Carbohydrate in Mammalian Organs H Handovsky —p 2464
*Related Skin Reactions and Multisensitiveness in Asthmatic Patients K H Baagoe —p 2466
*Lymphogranuloma Inguinale with Acute Rheumatic Symptoms A Koppel —p 2469
Carbonic Acid Content of Spinal Fluid in Circulatory Disturbances A Schurmeyer and H Schwarz —p 2470
Culture of Tubercle Bacilli A Jacobi —p 2472

Related and Unrelated Skin Reactions in Patients with Asthma —Eighty-eight asthmatic patients with positive skin reactions were tested with various substances While some of the reactions might be regarded as related or group reactions, in other instances the materials used were of such widely different nature that a "multisensitiveness of the patients must be assumed

Lymphogranuloma Inguinale with Acute Rheumatic Symptoms —Koppel describes three cases of lymphogranuloma inguinale in which the local phenomena were overshadowed by symptoms of a general nature Erythema nodosum was present in all, episcleritis in two and symptoms of acute polyarthritis rheumatica in one

Munchener medizinische Wochenschrift, Munich

74 2085 2124 (Dec 9) 1927 Partial Index

Pathogenesis of Peptic Ulcer E von Redwitz —p 2085
*Ganglion Injection in Trigeminal Neuralgia H B Hoppe —p 2089
*What the General Practitioner Can Do to Prevent Crippling in Poliomyelitis P Pitzen —p 2092
Infection of Gallbladder with Gas Forming Bacilli K Wahlberg —p 2095
Technic of Colposcopy H Hinselmann —p 2096
Epidemiology Reply to Burger F Wolter —p 2097
When Shall the Infant First Be Put to the Breast? F Engelmann and F Hamburger —p 2099
Industrial Hygiene in Soviet Russia A Dworetzky —p 2100
Fate of German Physicians E Liek —p 2103

Ganglion Injection in Trigeminal Neuralgia —Hoppe uses Hartel s method with 70 per cent alcohol, dose 0 5 cc His material comprises 125 patients, including ambulant cases He gives in tabular form the history of fifty one patients, in thirty-three of whom a follow-up examination was possible He can report eighteen permanent cures of more than twelve years, two of over nine years one of over eight years, four of over six years two of over five years, three of over four years, one of over three years These patients all had total anesthesia when discharged Of the eighteen patients discharged with partial anesthesia, two have remained free from attacks for five years, three were symptom-free till their death (from eight months to seven years)

What the General Practitioner Can Do to Prevent Crippling in Poliomyelitis —During the fever period, the position of the patient should be such as to put at rest and relax the spinal cord, which is best obtained with the spine in lordosis He places a plank across the bed under the mattress and inserts a small pillow under the lumbar region of the patient A plaster shell is useful with restless children or if pain is severe When the fever has passed, the extent of the paralysis must first of all be determined He advises against the electric current because it makes the children nervous, and uses the functional method The complete examination can be made in five minutes When the condition of the muscles is known, contractures can be avoided with certainty by correct position The best preventive of scoliosis is the plaster bed Contracture of the tensor fasciae latae, a sequela of disease of the gluteal muscles, can be avoided by overextension of the hips He suggests a mattress in three parts, with the lower segment replaced by a wedge-shaped piece, the thin end at the foot of the bed A sand-bag on the knee is used to obviate flexion contracture in the knee joint from paralysis of the quadriceps With a tendency to pes equinus, the patient should lie with the entire sole of the foot pressed against a box or stool placed at the foot of the bed In paralysis of the deltoid relaxation should be obtained by pillows inserted between the arm and the trunk Pitzen gets the patients on their feet as quickly as possible, believing that the impulse of the will is more powerful to set the muscles to work than is the electric current Children with quadriceps paralysis or with paralysis of several of the thigh muscles must not be allowed to walk without apparatus If the hip muscles are injured, going about on all fours must be forbidden as it leads to the worst contractures

74 2125 2166 (Dec 16) 1927 Partial Index

Relations Between Hormones and Vitamins I Vogt—p 2125
Pituitary Preparations in Puerperium H Franken and O Overhamm—p 2128
Treatment of Paroxysmal Tachycardia H von Hoesslin—p 2130 C td
Photographic Representation of Sedimentation of Blood Cells L Litten—p 2133
Mutation Through Roentgen Rays F Lenz—p 2135
Hahnemann's Caustic A Zimmer—p 2137
Technic of Infraroentgen Ray Therapy G Bucky—p 2140
Infection in Man with Bacterium Abortum of Bang P Bastai—p 2141
Management of Breast Milk Collecting Stations M I Kayser—p 2142

Management of Breast-Milk Collecting Stations—Sour breast milk was prepared in the same way as sour cow's milk used in infant feeding and it was equally well borne by the infants fed with it The results of feeding 10 liters of milk made from powdered breast milk to two infants were quite satisfactory The manufacturing process is at present very expensive Kayser mentions a method for detecting adulteration of breast milk with cow's milk

74 2167 2206 (Dec 23) 1927 Partial Index

Hemolytic Splenomegaly A Adler—p 2167
Therapeutic Use of Cathode Rays W Baensch and R Finsterbusch—p 2171
Use of Burker's Hemoglobinometer C Katsch and E Metz—p 2174
*Protective Inoculation Against Typhoid Hilgermann—p 2175
Combating Injuries from Anesthetics H Bremer—p 2177
Unusual Beginning in Multiple Sclerosis W Mayer—p 2178
Goiter Problem Grassl—p 2179
Defective Regulation of Circulation on Certain Movements and After Hemorrhages F Honck—p 2180
Traumatic Appendicitis F Bruning—p 2180
Treatment of Paroxysmal Tachycardia H von Hosslin—p 2181 C en

Therapeutic Use of Cathode Rays—Baensch and Finsterbusch report success in the treatment of lupus tuberculosis verrucosa cutis, psoriasis (not too extensive), infected superficial wounds, and cancroids by the application of cathode rays He used 95 kilovolts 3 milliamperes, at 5 centimeters' distance, the length of the irradiation varied from fifteen seconds to two minutes He warns that the method is not without danger, both to the operator and to the patient in the present stage of our knowledge The reactions must be allowed to disappear entirely before a repetition of the treatment is given His cures are not more than 6 months old, hence he cannot speak as to permanence

Protective Typhoid Inoculation—Hilgermann pleads for very small doses (dilution of the usual material 1 100,000 or 1 1 000 000) Individualization is necessary Massive doses may have the effect of lowering rather than raising the resistance of the organism By using very small doses the dangers of protective inoculation during an epidemic are avoided The idea that a general or a visible local reaction ought to follow every inoculation is erroneous

Combating Injurious Effects from Anesthetics—A preparation of charcoal used in a specially prepared oxygen mask, has been found useful by Bremer in keeping the air of the operating room pure by absorbing the anesthetic exhaled by the patient Another charcoal preparation ingested by the patient before operation, was successful in obviating the after-effects of the anesthetic on the patient

Wiener klinische Wochenschrift, Vienna

40 1501 1532 (Dec 1) 1927 Partial Index

Exophthalmic Goiter H Haberer—p 1501
Reticulo Endothelial System and Chemotherapy J L Kritschewski—p 1504
Organic Amnesia and Hypnosis Studies of Patients with Korsakoff's Syndrome H Hartmann—p 1507
*Admissibility of Preventive Injection Against Tuberculosis According to Calmette R Kraus—p 1508
Lipoid Soluble Bismuth in Treatment of Congenital Syphilis E Tudo—p 1510
Exchange Relations Between Labyrinth and Vegetative Nervous System T D Demetriades—p 1514
*Treatment of Pernicious and Severe Anemias R Hift—p 1517
Acute Anterior Poliomyelitis J Zappert—p 1517
Treatment of Gonorrhea in the Male A Perutz Supplement—pp 1 12

Admissibility of Preventive Injection Against Tuberculosis According to Calmette—The B C G strain possesses, according to Kraus' work a certain virulence for experimental animals It has the power when administered peritoneally or intravenously to provoke tuberculous changes in the organs after three or four weeks This does not hold true for subcutaneous or gastric administration The process is benign and does not become generalized This strain is a vaccine in Pasteur's acceptation of the term

Treatment of Pernicious and Severe Anemias—In 1918 Hift published an article in this journal in which he advocated the use of liver in the diet of cases of alimentary hemeralopia and in scurvy In 1917 he recommended it in hemorrhagic diseases of the pericardium He, therefore, claims priority in modern literature

40 1533 1564 (Dec 8) 1927 Partial Index

Skin and Venereal Diseases in the Clinic W Kerl—p 1533
Microscopic Researches on Capillaries of Human Conjunctiva D Scherf and J Urbanek—p 1538
*Influence of Sodium Nitrite on Circulation F Gaisbock and A Jarisch—p 1540
Subcutaneous Inoculation with Smallpox Vaccine W Knoepfelmacher—p 1541
Chemical Composition of Besredka's Bacterial Culture Filtrates E Epstein and K Lorenz—p 1542
Reciprocal Relations Between Labyrinth and Vegetative Nervous System T D Demetriades—p 1544 C en
Treatment of Tetanus in Haberer's Clinic M Tschebull—p 1546
Epidemic Encephalitis (Lethargic) J Zappert—p 1547

Influence of Sodium Nitrite on the Circulation—Gaisbock and Jarisch found that in healthy human beings the minute volume of the heart increased after administration of therapeutic doses of sodium nitrite The blood pressure and pulse frequency were unchanged

Subcutaneous Inoculation with Smallpox Vaccine—In two infants, 1 cc of smallpox vaccine (1 1,000) was injected subcutaneously Revaccination after two and three years, respectively, resulted in typical inoculation scars In three other infants similar subcutaneous inoculations were made, but in these cases the dilution was 1 100 They reacted with a characteristic infiltrate Four years later they proved immune to cutaneous inoculation In a sixth child the dilution of the subcutaneously injected vaccine was 1 200 (the dose being still 1 cc) Five years later this child was immune to cutaneous vaccination

40 1597 1628 (Dec 22) 1927 Partial Index

Pathology of Cerebrospinal Fluid F Plaut—p 1597
Experimental Lengthening of Period of Gestation in Rabbits H Knaus—p 1600
*Wrong Diagnoses H Maendl and E Waltuch—p 1601
Carbon Monoxide Poisoning in Coal Mines B Weissberger—p 1605
Chemotherapy and Electrotherapy R Eisenmenger—p 1607

Fourteen Wrong Diagnoses in Diseases of the Lungs, Bones or Joints—In this series syphilis, carcinoma metastasis and heart lesions were mistaken for tuberculosis One patient had been treated for seven years for fungus of both knee joints For years he had been confined to bed The disease was gonorrheal gonitis and under treatment with milk injections, etc, he has become entirely able to work In another case skin tuberculids over the lumbar spine were diagnosed as spondylitis Maendl and Waltuch warn especially against mistaking burrowing abscess proceeding from spinal caries for appendicitis or adnexal tumor Wide opening of the abscess in these cases leads to mixed infection from without, usually with fatal results

Zeitschrift f Geburtshulfe u Gynakologie, Stuttgart

92 257 472 (Nov 29) 1927

Prolapse of Mucous Membrane at Os Uteri H Hinselmann —p 257
Malignant Chorionepithelioma R Meyer —p 259
*Radiotherapy of Vaginal Carcinoma B Bienenfeld —p 326
*Primary Carcinoma of Vagina E Goldberger —p 338
Uterine Metastasis of Primary Ovarian Carcinoma H O Neumann —p 350
Fate of Premature Infants C Keller —p 379
Replacing Chloroform Narcosis by Brief Ether Narcosis in Threatened Intra Uterine Asphyxia P Schumacher —p 417
Blood Examinations in Extra Uterine Pregnancy M Kruger Franke W W Haagen and G Ockel —p 428
Genesis of Hematosalpinx E Terruhn —p 432

Radiotherapy of Vaginal Carcinoma —Bienenfeld reports a one and one-half year cure, by combined roentgen-ray and radium treatment, in a case of primary tumor of the vagina in a woman, aged 32 The tumor was histologically demonstrated to be a solid plexiform carcinoma of low maturity It was in an advanced stage She reviews the literature

Primary Carcinoma of the Vagina —In eight years Goldberger saw thirty-seven cases In the same period there were 1,097 carcinomas of the cervix and eighty-three of the body of the uterus Thirty per cent of the patients with vaginal carcinoma were *in the fourth or fifth decade of life* The average number of births was 2 6, eleven patients had borne no children In four cases there had been previous mechanical insults or perhaps constitutional changes The seat of the tumor was the posterior wall twenty-one times, the anterior wall, seven times, the lateral wall five times, in four cases the growth of the tumor was annular The typical picture of squamous cell epithelioma appeared on histologic examination in nearly all the cases The initial symptoms are even more trivial than those of carcinoma of the cervix He reports two cures one of four and one-half years in a woman aged 39 after radical operation according to Wertheim, the other in a woman, aged 38, with primary squamous cell epithelioma of the vagina and diffuse Paget cancer of the vulva, after radical operation followed by roentgen irradiation This patient remained well for two years until she died of an intercurrent disease

Diagnostic Value of Blood Examinations in Extra-Uterine Pregnancy —Krüger-Franke et al found that Schiller s hemogram, the blood sedimentation test and determination of hemoglobin were rarely of practical value in the differential diagnosis of extra-uterine pregnancy In deciding between appendicitis or peritonitis and extra-uterine pregnancy, a very slight shifting to the left would exclude the first two, a very high polychromasia would speak for the loss of a large amount of blood The anamnesis, the clinical picture, above all the typical appearance of the patient remain the most important factors

Zeitschrift fur Urologische Chirurgie, Berlin

23 339 478 (Dec 15) 1927

Paranephritic Abscess R Chwalla —p 339
Malformations of Urinary Organs F H Kreuzbauer —p 365
Plastic Operations for Hydronephrosis A S Maximovitsch —p 383
Diseases of Ureter J Gottlieb —p 390
Fibrosarcoma of Spermatic Cord R Chwalla —p 419
Kidney Carbuncle A W Smirnow —p 425
Foreign Bodies in Bladder E P Wolff —p 428
Tuberculosis of One Kidney and Toxic Nephritis of the Other O Orth —p 435
Treatment of Prostatic Hypertrophy with Intra Urethral Electrocoagulation R Oppenheimer —p 443
Chronic Urethritis in Man E Brack —p 452
Paravertebral Anesthesia in Urology H Widenhorn —p 460

Paranephritic Abscess —Paranephritic abscess is defined as an acute suppurative inflammation of the fatty renal capsule or of the renal fascia Infection takes place either through an embolic metastatic process or by extension from the kidney or neighboring organs Most authors believe that it originates in a metastatic abscess of the cortex of an otherwise normal kidney These abscesses can perforate into the loose pararenal tissue, or infection can take place through the lymph channels The staphylococcus is the organism found most frequently Trauma plays a part in a number of the cases probably by producing a hematoma in the fatty tissue with subsequent infection It is difficult to determine whether the kidney is involved in the paranephritic process The diagnostic importance of a recent staphylococcus infection, such as furuncle, carbuncle, felon or sore throat is emphasized Frequently, no etiologic factors can be elicited This was the case in two thirds of the author s cases Urinalysis does not help very materially in determining concomitant kidney involvement Normal urine suggests primary metastatic paranephritis, a markedly pathologic urine is suggestive of renal abscess However, all urinary conditions, including aneuria of the involved side, may be secondarily induced by a paranephritic abscess without the participation of the kidney itself Chwalla considers exploratory puncture permissible The most important disease from a differential diagnostic standpoint is suppurative retrocecal appendicitis The author is opposed to the more radical methods, with exposure and even removal of the kidney itself In his thirty-two patients, thirty recovered after simple incision and drainage

Acta Chirurgica Scandinavica, Stockholm

62 399 598 (Dec 24) 1927

Idiopathic Hepatic Abscesses and Air Embolism of Hepatic Vessels F Langenskiold —p 399
Perforating Gastric Ulcer and Pyloric Stenosis in Thirteen Year Old Children J Nordentoft —p 426
Coxa Plana Acute Coxitis and Ligamentum Teres I Elgart —p 454
Primary Cancer in Jejunum and Ileum J Hellstrom —p 465 In English
*Role of Cholesterol in Formation of Gallstones S Hansen —p 483

Rôle of Cholesterol in Formation of Gallstones —The greatest number of gallstones in man consist mainly of cholesterol, recently formed stones are made up almost entirely of that substance The cause of gallstone formation should be sought in an abnormal composition of the bile and not in any local conditions of the bile tracts Experiments in vitro and in vivo have shown that cholesterol is precipitated from the bile, and that infection plays no part in the process By increasing the quantity of cholesterol in the blood of rabbits through feeding them on cholesterol and in other ways, the cholesterol content in the bile is increased and in such animals cholesterol is precipitated in the gallbladder partly as isolated crystals, partly as crystals clumped together in a way never found in normal animals Narrowing the cystic duct or the gallbladder in rabbits with cholesteremia, results almost constantly in formation of cholesterol concretions, while the same operation in normal animals may cause pigment but not cholesterol to be precipitated Typical mixed gallstones were never obtained In patients suffering from gallstones, one often finds a cholesteremia, which may reasonably be attributed to impairment in the function of the suprarenals or ovaries

Ugeskrift for Læger, Copenhagen

89 1167 1192 (Dec 15) 1927

*Cutaneous Reactions in Hay Fever K H Baagøe —p 1167
*Antigenic Action of Various Kinds of Pollen O Thomsen and K Baagøe. —p 1171

Investigations on Cutaneous Reactions in Hay-Fever —Tests of the cutaneous reaction to pollen from various Danish plants were made by Baagøe in twenty cases of hay-fever and thirty of asthma associated with cutaneous hypersensitiveness to pollen The pollen of meadow grasses and of rye caused the most frequent and marked reactions in both groups, positive reactions appearing in all the hay-fever cases A pronounced reaction i e, a cutaneous papule at least 20 mm wide, was seen in sixteen and is regarded as pathognomonic for hay-fever A negative cutaneous reaction to pollen, he says, rules out hay-fever

Experimental Investigation on Antigenic Action of Various Kinds of Pollen —Thomsen and Baagøe demonstrated in animals that immunization with pollen can cause a marked production of antibodies without resulting hypersensitiveness in the actively immunized organism or in a healthy organism passively treated with immunizing serum

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TOBACCO ANGINA PECTORIS

ELI MOSCHCOWITZ, M D
NEW YORK

That tobacco smoking may cause a clinical condition closely resembling true angina pectoris due to coronary or aortic disease is more or less well known The difficulty in the differential diagnosis between the two conditions may be increased when the patient shows some objective evidence of coronary and aortic disease, in such instances one cannot speak strictly of 'tobacco heart" but of the effect of tobacco on an already existing cardiovascular disease In both instances, the effect of long continued and complete abstinence is profound but the differentiation between tobacco angina and angina pectoris due to organic disease is possible in the last analysis only by noting whether suffering ceases with abstinence Even before this event, a differentiation may sometimes be made by taking into consideration certain clinical manifestations peculiar to tobacco angina

REVIEW OF THE LITERATURE

Strangely, there are not many first-hand observations on the effect of smoking on the heart Most of the remarks in current textbooks bear the characteristics of literary legacies

Allbutt[1] mentions cardiac irregularity and even delirium cordis Palpitation is common, especially among young smokers Most significant is Allbutt's observation that smoking may cause violent 'angina which is distinguished from true angina by 'the excessive violence and length of the attacks" He also says that the blood pressure rises during smoking and falls below normal after cessation Willson[2] describes two cases of unusually severe anginoid pain which ceased after smoking was discontinued Külbs[3] describes arrhythmia, extrasystoles and tachycardia, especially in the young After the age of 50, there may arise symptoms of angina and aortalgia In the interval between attacks, bradycardia is more common than tachycardia The blood pressure is usually normal The orthodiagram shows a heart of normal size, while the aorta is enlarged

John[4] found an increase in both the systolic and the diastolic pressures during smoking, which is followed on cessation by a fall, lasting two hours Favager[5] noted arrhythmia, bradycardia or tachycardia, precordial oppression, dyspnea, cardiac asthma, cyanosis and even Cheyne-Stokes respiration He reports a fatal case of "cardiac paralysis' in which the autopsy showed "dilatation and fatty heart ' I doubt whether tobacco caused this death

Neuhof s[6] report is apparently the only clinical one in which some of the modern methods of cardiologic study were introduced He observed several cases of extrasystoles (usually auricular), one case of flutter and one of fibrillation He also reports in detail a case of sino-auricular block He quotes Pezzi and Clerc, who studied the effects of nicotine on cardiac rhythm *in animals* They divided these into an initial bradycardia and a later tachycardiac phase In the former they occasionally noted auricular arrest with ventricular arrhythmia and less frequently auricular fibrillation With the tachycardia they observed lessened auriculoventricular conduction time, retrograde conduction, auricular extrasystoles or incomplete auriculoventricular dissociation Cushny[7] showed that experimental nicotine injection "disturbed cardiac rhythm mainly by a neurotropic influence upon the ganglionic terminations of the vagus and sympathetic nerves" There may therefore be two opposite effects slowing or acceleration, depending on the preponderance and selective action on the two nerves In a recent scholarly paper Rolleston[8] says that he has seen two severe cases of *anginoid* pains in physicians and that the minor degrees of anginoid pains, such as substernal oppression and tightness on exertion are not uncommon He quotes Brunton to the effect that a sustained low blood pressure in the absence of evidence of tuberculosis, usually spells excessive smoking

One must be cautious in applying the experimental results of injections of nicotine to the effects of smoking on the human organism Even assuming that nicotine is the only offending ingredient of tobacco tobacco smoke also contains, according to Gies, Kahn and Limerick[9] collidine, aldehydes and carbon monoxide Apparently there is a difference in the content of these substances in different varieties of tobacco smoke Armstrong[10] finds that cigaret smoke contains 1 per cent of carbon monoxide, while a quickly smoked Havana cigar contains 8 per cent Dixon[11] has demonstrated that the blood of cigaret smokers may contain as much as 5 per cent of carbon monoxide According to Rolleston the smoke from pipes contains the most nicotine, from cigars the next largest quantity and from cigarets the least Dixon believes that the effects of cigaret smoking are chiefly due to carbon monoxide while the effects from cigars are the result of nicotine

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[1] Allbutt T C Diseases of the Arteries Including Angina Pectoris, New York The Macmillan Company 1915

[2] Willson New York M J **102** 541 1915

[3] Kulbs F Ztschr f klin Med **99** 258 1925

[4] John Ztschr f exper Path u Therap **14** 752 1913

[5] Favager Wien med Wchnschr **28** 497, 1914

[6] Neuhof Selian Sino-Auricular Block Due to Tobacco Poisoning Arch Int Med **17** 659 (May) 1916

[7] Cushny A R. Textbook of Pharmacology and Therapeutics Philadelphia Lea & Febiger 1924

[8] Rolleston Humphrey Lancet **1** 961 (May 22) 1926

[9] Gies W J Kahn M and Limerick, O L New York M J **113** 809 (June 1) 1921

[10] Armstrong H E Brit M J **1** 992 (June 24) 1922

[11] Dixon W E Brit M J **2** 819 (Nov 19) 1921

All are agreed that much depends on the rapidity of smoking, whether the smoke is inhaled, and whether the pipe, cigar or cigaret is smoked to the bitter end In the latter case, a large deposition of nicotine occurs Baumberger[12] has studied the effects of carbon monoxide in tobacco smoke

The dosages and methods of absorption in the human organism are probably of considerable consequence Furbringer[13] regards nicotine as the most toxic substance in tobacco smoke It varies in quantity between 2 and 7 per cent The fresher the tobacco, the richer is the distillation product in nicotine He asserts that the smoke from a pipe is freer from nicotine than that of a cigaret, and that the inhalation of smoke into the bronchi increases the absorption of nicotine eight times Heinz[14] says that nicotine poisoning is more common in smokers of Havana tobacco, because the leaf is greener and fresher In my experience it has been of little consequence whether the tobacco is Havana or otherwise The majority of my cases have resulted from the smoking of cigarets, made largely of Turkish or Egyptian tobacco

REPORTS OF CASES

Case 1—A surgeon aged 61, had smoked cigarets for forty years and in the last twelve years or more he had consumed about twenty a day He felt in perfect health until March, 1925 when early one morning, he was awakened by a violent precordial pain The pain lasted about a minute or more and then ceased entirely During the attack there was no change in the facial color or pulse rate, arrhythmia, dyspnea or change in the normal heart sounds did not occur Attacks recurred frequently during the day, and were relieved for a time by a hypodermic injection of morphine From that time on until they ceased rather dramatically in May, 1925, hundreds of similar attacks occurred For a while they came on capriciously, for instance while the patient was at complete mental and physical rest Usually they awakened him out of a sound sleep at 5 or 6 a m Strangely enough while in the operating room he had few or only slight and transient attacks Later, the attacks seemed to arise more frequently after exertion or mental tension Sometimes the attacks would come on with almost startling rhythmicity for instance, every six or seven minutes so that one could predict almost to the second when another attack would arise The character of the attacks did not vary from the first one Most of them were agonizing the pain was localized to the precordial region and lasted many minutes Even repeated doses of morphine proved of no avail Later, the patient admitted that there was radiation of the pain down the left arm to the tip of the fingers

Physically, the heart and arteries did not show any change either during or between the attacks except for a moderate radial thickening, even less than one would expect at that age. The blood pressure averaged 130 systolic and 75 diastolic A complete orthodiagraphic and electrocardiographic examination by Dr B S Oppenheimer did not show any change except a moderate dilatation of the aorta incident to the patient s age Weeks passed, and although smoking was completely abandoned the attacks persisted with practically the same frequency and severity as before Various therapeutic measures were instituted, but aside from the nitrites and narcotics nothing afforded relief May 20 1925, there came a memorable day in which the attacks were of fearful violence and practically continuous—a status anginosus Nothing afforded relief even after three-fourths grain (0 05 Gm) of morphine sulphate administered in divided doses during the night In the morning the pain was gone and from that day to this (June, 1927) the patient has been free from any recurrence

For the first few months after this dramatic relief, the patient had an occasional "stitch in the apex region, especially after exertion or mental strain For the past year there has not been any sensation whatever, except occasionally in a smoke-laden atmosphere He complains of some dyspnea on exertion, but his color is excellent and physical examination of the heart does not reveal anything abnormal The blood pressure is 135 systolic and 85 diastolic, the urine is normal

In commenting on this case, it is necessary to emphasize the following points (1) the long history of cigaret smoking, (2) the capricious onset of the attacks, usually at rest, (3) the extreme violence and long duration of the pain, (4) the occasional startling rhythmicity of the attacks (5) the absence of all change in facial color, (6) the absence of physical signs or change in the pulse during the attack, (7) the absence of all myocardial change as shown by the electrocardiogram, (8) the freedom from attacks after only three months' abstinence from smoking, and (9) the presence of a certain degree of sensitization, so that slight pain arises when the patient is in an atmosphere of tobacco smoke

Those familiar with the conventional angina, the result of coronary or aortic disease, need hardly be reminded that many of the features described in this case are unusual I refer to the absence of the change of color so characteristic in true coronary disease, to the capricious onset of the attacks and their rhythmicity and, above all, to the unusual violence and duration of the pain The pain in true angina is certainly bad, but I have never witnessed the agony suffered by this patient While a change in the character and rhythm of the pulse and heart action is usual in true angina, its absence is not infrequent, so that a differentiation on this ground is only relative Failure to find electrocardiographic evidences of intraventricular conduction disturbance, after so lengthy and severe a period of attacks, speaks somewhat against any coronary disease (It is known that occasionally coronary occlusion may occur, and subsequently no characteristic electrocardiographic evidence may be found)

The one point that seemed to indicate true organic disease and not a toxic state was the fact that the attacks did not subside or even show a tendency to abate after cessation of smoking They ceased only about three months later This, however, as the cases to be cited will show, is the usual phenomenon—a fact important to remember The factor indicating sensitization I shall discuss later

Case 2—A merchant, aged 41, a smoker of Turkish cigarets and Havana cigars since the age of 12, stated that about one week before Aug 21, 1923, he awakened one morning with a violent precordial pain radiating to the left arm The pain disappeared, to return one week later at 2 a m, when it awakened him from a sound sleep

The patient had had syphilis twenty years before, he had been adequately treated, however, and the last Wassermann test about a year before had been negative He had been treated for high blood pressure and albuminuria for some years previously

The patient was sparely built 150½ pounds (68 3 Kg) in weight, and 5 feet 6 inches (167 6 cm) in height The apex beat was in the sixth space, nipple line, and there were no abnormal sounds or murmurs The pulse was 82, and the blood pressure 140 systolic and 100 diastolic There was no dyspnea. The urine was normal

Smoking was forbidden but slight attacks of precordial pain persisted until Sept 29, 1923, when the patient returned, saying that all pains had completely disappeared

In March, 1924, he again began to smoke from eight to ten cigarets a day June 19, he reported that he had substernal pain, especially on walking Smoking was again stopped and the pain disappeared within a few weeks Nov 17, 1925, he again complained of substernal pain on walking, and slight dyspnea The blood pressure throughout these months remained about the same—from 135 to 155 systolic and 100 diastolic. The urine remained free from albumin. The physical examination of the heart did not reveal any abnormality. The pains again disappeared for some weeks. In January, 1926, the patient was allowed to try "nicotine-free" cigarets, of which he smoked from ten to twelve a day. April 24, he reported that he had slight attacks of substernal pain radiating down the left arm. I saw him in a number of these attacks, and at no time was there a change in color or in cardiac rhythm. The blood pressure was 125 systolic and 90 diastolic. Despite advice, he continued to smoke "nicotine-free" cigarets for a few days. April 28, he reported that he continued to have severe attacks. The attacks came usually without warning and occurred as often during complete rest as after exertion, or when the stomach was empty as after a full meal. May 29, he asserted that he had had only one slight attack during the preceding week.

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[12] Baumberger J P J Pharmacol & Exper Therap 21 23 (Feb) 1923

[13] Fürbringer Deutsche med Wchnschr 52 2021 1926

[14] Heinz R. Deutsche med. Wchnschr 49 318 (March 9) 1923

In September, 1926, the patient was referred to Dr. B. S. Oppenheimer in consultation who reported, after examination, that the apex beat was visible in the sixth space, about 13 cm. from the midline and that the left border of the heart was well outside the nipple line. The heart rate was about 92 beats a minute. The blood pressure was 126 systolic and 96 diastolic. The electrocardiogram showed a left ventricular preponderance, as indicated by inversion of the main deflection in lead 3. The Q-R-S complexes in leads 1 and 3 were slurred, and in lead 2 they were both notched and slurred. The heart rate was about 90 beats a minute. The T wave in lead 1 was slightly inverted, and in lead 3 there was partial inversion of the T wave. These conditions in the T wave were probably due to digitalis.

The teleroentgenogram taken at the same time showed an enlarged heart, with marked hypertrophy of the left ventricle. The heart was duck-shaped, the left border being sharply outlined and the apex rounded. The cardiac dimensions were as shown in table 1.

These dimensions were abnormal, the total transverse diameter of the heart being greater than half the transverse diameter of the thorax taken at the base of the lungs. These changes are characteristic of hypertension. The lung markings were increased.

While the causal relation between smoking and the anginoid attacks is fairly clear, one cannot escape the thought that this patient already had coronary or aortic disease. The history of syphilis and hypertension, the enlarged heart, the shape of the heart shadow, and the electrocardiographic evidence all bespeak such disease. The normal systolic pressure may indicate that severe myocardial injury had already occurred. The relative increase in diastolic pressure shows that there was still some increased peripheral resistance. At all events, extraordinary compensation must have taken place, for today the patient looks, feels and acts well.

TABLE 1.—*Cardiac Dimensions in Case 2*

	Cm.
Median to right	4.6
Median to left	11.7
Total transverse diameter of heart	15.3
Transverse diameter of thorax	29.7
Transverse diameter of aorta	5.1

This is not an instance, strictly speaking, of a tobacco heart. Rather it is illustrative of the effects of smoking on an already injured heart; in other words, the case is one in which tobacco was the exciting cause in an organic heart condition potential of true anginoid pains. The proper evaluation of the various factors in this case remains entirely for the future.

CASE 3.—A lawyer, aged 52, who first consulted me, Feb. 12, 1926, had smoked daily from twelve to eighteen strong Havana cigars with an occasional pipe ever since the age of 25; he stated that he chewed his cigars while smoking. He complained that for the preceding two weeks he had had attacks of violent and prolonged precordial pain radiating down the left arm. At first the pain came on during rest; latterly, the pain came after walking a short distance. Belching sometimes relieved the pain.

For his height he was slightly overweight (165 pounds or 74.8 Kg.). His color was good. The apex of the heart was in the fifth space, axillary line; the outlines by percussion were apparently normal and the sounds were clear. The blood pressure was 150 systolic and 90 diastolic. The urine did not show any albumin or sugar.

The patient was sent to Dr. B. S. Oppenheimer in consultation who reported that the electrocardiogram showed a normal sinus rhythm, with a left ventricular preponderance, as indicated by *inversion of the main deflection in lead 3*. The P wave and T wave in lead 3 were isoelectric. However, there were no electrocardiographic evidences of myocardial or coronary disease but neither of these could be ruled out.

TABLE 2.—*Cardiac Dimensions in Case 3*

	Cm.
Median to right	4.2
Median to left	9.8
Total transverse diameter of heart	14.0
Transverse diameter of thorax	29.6
Transverse diameter of aorta	4.7

The teleroentgenogram showed a heart in the normal position. The left ventricle was slightly hypertrophied and the ascending aorta was somewhat dilated. The cardiac dimensions were as shown in table 2.

The lung markings were increased. Although the foregoing observations are not of great significance in a man of 52 years of age, Dr. Oppenheimer considered that because of the anginal pain they might be of real importance, especially the dilatation of the aorta.

The attacks of pain slowly diminished in intensity and severity. March 6, 1926, the patient had only slight pain on walking. The pains ceased entirely about the beginning of April, 1926, and the patient has been free from pain ever since. He feels entirely well.

The main points in this history worthy of emphasis are these: 1. A man of 52, a heavy smoker of Havana tobacco, is suddenly stricken with severe anginoid attacks. 2. There has not been any previous hypertension. 3. The attacks are of unusual violence and prolonged, and occurred, especially at the onset, during perfect rest. 4. The attacks ceased only after seven weeks' abstinence from tobacco. 5. There were no changes in the heart beyond the normal range for a man of his age.

This case is submitted as one of pure tobacco heart. There is every reason to believe that the man will remain well, provided he continues to abstain from tobacco.

With the present spread of smoking among women it was not surprising to encounter a case of tobacco heart in a woman.

CASE 4.—K. B., a woman, aged 35, had smoked an average of between twenty and thirty Turkish cigarets a day, and had always been in perfect health. March 14, 1926, while lying quiet, she was suddenly seized with a violent precordial pain radiating down the left arm. Her color was good, and the pulse rate was 78 and regular; the heart showed normal rhythm, outline and sounds. Smoking was forbidden. These pains recurred frequently in the course of the next week, but not so violently, and usually when the patient was at rest. There was no dyspnea. A sense of general bodily weakness supervened for which the patient was placed in bed for one week. The pains continued almost daily with gradually diminished severity, and June 4, 1926, she reported that they had ceased. The blood pressure was 125 systolic and 95 diastolic. The urine was normal. When last seen, in June, 1927, she was perfectly well.

A woman, aged 35, a rabid cigaret smoker, is seized with anginoid pains of marked severity. During the attacks there is no change in color. Examination of the heart does not reveal anything abnormal, and there is no change in function during the attack. The attacks do not cease until eight weeks after the cessation of smoking.

This case is also submitted as an instance of genuine tobacco heart.

COMMENT

I have seen two other cases in which anginoid pains ceased after the use of tobacco was stopped, but the period of observation has been too short to warrant a report at this time.

I do not intend to convey the impression that anginoid pains represent the only manifestation of tobacco heart. I recall cases of moderate tachycardia that seemed to be due to abuse of tobacco, and about three years ago I witnessed marked cardiac irregularity, due to extrasystoles, which disappeared within a short time after tobacco was forbidden.

SUMMARY

In four patients who suffered from anginoid pains, the pain ceased when they no longer smoked. The youngest patient was 35 and the oldest 62, the average age being somewhat above 50. One of the four was a woman. They had all smoked for many years previous to the seizures. Two smoked only Turkish cigarets, two smoked strong Havana cigars with occasional pipes.

The patients all suffered from pains closely resembling those of angina pectoris resulting from true coronary or aortic disease. The pains of tobacco heart have, however, the following characteristics distinguishing them from those resulting from coronary or aortic disease: 1. The pains are more intense and of longer duration in tobacco angina than in true angina. 2. The pains are more likely to arise during complete rest, and may even awake the patient from a sound sleep. In true angina, as is well known, the attacks are usually induced by exertion, especially after a meal, and by emotion. In these particulars, the pain of tobacco poisoning resembles the true neuralgias.

A prominent feature is the apparent sensitization that occurs. In a number of my patients, a greater or lesser degree of pain was induced by mere puffing of a cigaret, or even when the patient was in an atmosphere of tobacco smoke. Whether or not this is a true anaphylactic phenomenon cannot be said. Rolleston also calls attention to the frequently acquired susceptibility.

In three of the patients there was no objective evidence of cardiac or vascular disease, as determined by modern methods of examination, nor were there in the interval between the attacks or subsequently any subjective evidences of such disease. As all subjective phenomena were not relieved by any means except the cessation of smoking, these three cases are submitted as true examples of tobacco heart.

In the other case, there was evidence of disease or disturbed function, as shown by blood pressure determinations, teleoroentgenograms and electrocardiographic determinations. In these three cases the electrocardiographic tracings showed some changes suggestive of the intraventricular conduction disturbance, a condition associated with the clinical syndrome of angina pectoris. There are a number of ways in which the use of tobacco may be related to this condition:

1. There may not be any relation, and the anginoid pains may have ceased not because but in spite of the discontinuance of smoking. That anginal pains may cease in true coronary or aortic disease is well known, especially when infarction has occurred or when myocardial failure has supervened. In such cases, a previous hypertension drops or the tension becomes normal.

Such a contingency is not likely in any of my cases, for none of my patients subsequently revealed any of those grave subjective or objective signs of myocardial failure generally associated with the terminal phases of coronary infarction or myocardial failure. All these patients are now practically well. It will be interesting to follow their lives, for it is only in this way that a correct answer to this problem can be given. The mere cessation of symptoms after discontinuance of smoking is not final proof that tobacco was the cause, except in the one case in which all the symptoms recurred at three separate intervals soon after the resumption of the old habits, and gradually ceased after the discontinuance of smoking. In such a case, one can safely speak of cause and effect.

2. The tobacco may have caused sufficient sclerosis of the coronary arteries or aorta to induce angina. Ever since the work of Huchard,[15] nicotine has been supposed to cause arteriosclerosis. One of the evidences submitted has been the supposed development of arteriosclerotic lesions in rabbits by the injection of nicotine.[16] This demonstration has not been well controlled, for arteriosclerosis of the aorta is extremely common in rabbits. Altogether, the assumption of the deleterious action of tobacco on the heart rests on an extremely unstable foundation, and Sir Clifford Allbutt, who was extraordinarily interested in this question, said in almost his last writings that the effect of tobacco on hyperpiesia and atheroma was negligible.

3. The use of tobacco may have caused subjective disturbance in a patient whose heart was seriously injured; in other words, the tobacco is merely the exciting cause in a patient with potential angina. This is by far the most likely view and is a strong argument for forbidding tobacco to patients with true coronary or aortic disease entirely and forever. My experience has shown that it serves no purpose to advise mere cutting down; there should be either complete abstinence or no reduction whatever.

What the lesion is, if any, that brings about the pain is entirely a matter for speculation. Whether the problem is the same as that involved in true angina cannot be answered. As there is evidence according to Wiggers[17] that tobacco causes constriction of the blood vessels, it is possible that this constriction may be the mechanism involved.

CONCLUSIONS

1. Tobacco smoking may cause symptoms closely resembling the angina pectoris of coronary or aortic disease.

2. The variety of tobacco used apparently makes little difference.

3. The pain of tobacco heart is usually more intense and of longer duration than that of true angina, and is usually accompanied by slight or no disturbance of heart function.

4. There is strong evidence that sensitization occurs in patients who have once had tobacco heart.

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[15] Huchard: Maladies du cœur, Paris, 1899.

[16] Adler: J. M. Research 8: 309, 1902.

[17] Wiggers, C. J.: Modern Aspects of Circulation in Health and Disease, ed. 2, Philadelphia, Lea & Febiger, 1923.

5 There are two varieties of tobacco heart (*a*) those in which evidence of cardiac injury is not present, and (*b*) those in which the signs are suggestive of the intraventricular conduction disturbance associated with coronary or aortic disease In the latter, the tobacco is probably the exciting cause of the anginoid pains The use of tobacco in these patients is therefore absolutely contraindicated What the ultimate result will be is a problem reserved for further observation

6 To limit the use of tobacco in patients suspected of tobacco poisoning is not enough Withdrawal of tobacco should be complete

7 Anginoid pains of tobacco origin do not cease promptly after withdrawal They may continue many weeks or even months

8 The mechanism of tobacco angina is not known It is probably due to the constrictor action of tobacco on the blood vessels It resembles also the pains characteristic of the true neuralgias

25 West Sixty-Eighth Street

INTRAPERITONEAL USE OF DEXTROSE IN TREATMENT OF DISEASES OF CHILDREN*

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AND
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When an infant suffers from a severe nutritional disturbance there is often a deficiency of food and water Water is lost as a result of diarrhea and evaporation from the lungs, and food is not assimilated for obvious reasons The indication for the treatment of these infants with severe nutritional disorders is, therefore, to supply the lacking elements Food and water must be given

Vomiting often hampers the giving of water by mouth Hypodermoclysis is painful and its possibilities are limited Fluids administered by rectum are not retained, and the small veins make intravenous injections impracticable Blackfan and Maxcy [1] first advocated intraperitoneal injections as a means of supplying the desired fluid The method of intraperitoneal injections is a practical one, when it is not possible to give enough fluid by mouth on account of vomiting and diarrhea Much larger amounts of fluid may be given intraperitoneally than intravenously or subcutaneously The procedure also throws less strain on the heart than does intravenous injection

Intraperitoneal injection also furnishes a method of supplying food to the child Dextrose readily meets this requirement and was soon added to the salt solution [2] That the use of dextrose was well justified as a food in nutritional disorders has been substantiated by many workers [3]

It now appeared that an ideal form of treatment had been involved, namely supplying fluid and food, as dextrose, intraperitoneally Unfortunately, many undesirable results from the intraperitoneal injections of dextrose began to be observed These ranged from a simple abdominal distention [4] to a rise in temperature, cyanosis, and weak pulse [5] These results were so distressing that Tenzer and Ebel [6] considered the intraperitoneal injection of dextrose an heroic measure So many reactions of this kind resulted from so-called dextrose shock that in 1925 intraperitoneal injections of dextrose were given up in this hospital until some method of preventing them could be found

Williams and Swett [7] found that dextrose solutions rapidly became acid on autoclaving or on standing several hours at room temperature For example, one of p_H 6 20 after standing in the laboratory for twenty-four hours was of a p_H of 5 15 and, after forty-eight hours, of 4 15 They argue that as the blood has a p_H range of from 7 3 to 7 5, a hydrogen ion concentration of blood or tissues above or below these figures is not compatible with life When solutions of higher or lower hydrogen ion concentration than that of the blood are introduced into the circulation, the normal buffer substances of the blood serve to correct the faulty reaction and thus protect the body against injury If the solution is injected in a greater amount than the blood can buffer, or at a rate in excess of the capacity of the blood to neutralize it, then a severe reaction or death results

Stoddard,[8] following this reasoning, buffered dextrose solutions with a phosphate solution and did not obtain any bad results following intravenous injections To apply this method to intraperitoneal injections, the following experiments were carried out

PROCEDURE

Dextrose solutions, after boiling for twenty minutes or autoclaving were allowed to stand at laboratory temperature After various lengths of time, they were injected intraperitoneally into dogs The resulting reactions increased in intensity with the length of time following sterilization Three hours after sterilization of the dextrose solution, reactions would develop following injection These varied from a simple distention to severe shock in specimens that had stood a longer time

Buffering the solution was successful in a majority of cases, but as a few cases of nausea developed, it was decided to overcome the tendency to acid formation in another way This was done by autoclaving the dextrose until it was dry, and then adding sterilized water to it There were no effects of any kind in the dogs injected intraperitoneally with dextrose prepared in this way

METHOD OF PREPARATION

Chemically pure dextrose is used Five grams is accurately weighed and placed in a pyrex tube 150 by 20 mm These tubes must be thoroughly dried by a hot blast and by baking for forty minutes at 100 C The tube is then plugged with a piece of gauze 20 by 20 cm, four thicknesses being used A sterile "four" makes an ideal plug This gauze is placed over the top of the tube and pushed down into the bore for about 10 cm A small piece of cotton is placed at the bottom of the cartridge formed, and about 5 Gm of calcium chloride is poured above this The gauze is now twisted well into the tube enough being left at the top so that it can be extracted easily

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[4] Crawford W L Intraperitoneal Injection of Fluids in Infants Illinois M J **47** 374 (May) 1925

[5] Maches S Intraperitoneal Transfusion München med Wchnschr **68** 1082 (Aug 26) 1921

[6] Tenzer O and Ebel A Intraperitoneal Transfusion, Monatschr f Kinderh **33** 295 (March) 1926

[7] Williams J R and Swett Madeline Hydrogen Ion Concentration Studies J A M A **78** 1024 (April 8) 1922

[8] Stoddard J L The Avoidance of Intravenous Glucose Reactions Boston M & S J **191** 1121 (Dec) 1924

After these tubes have been autoclaved at 15 pounds pressure for twenty minutes, they are ready for use They will keep for at least fourteen days, which is the longest time we have ever allowed them to stand

Tubes should not be used which show any brown spots in the dextrose, or moisture in the plug

One hundred cubic centimeters of double distilled water is added to the dextrose when ready for use, and a 5 per cent solution is thus obtained It is our custom to mark each tube at its capacity of 100 cc and to pour the water directly into the tube It was found that a higher concentration than 5 per cent tended to draw body fluid into the abdominal cavity, which corresponded to the observations of Narat[9] Obviously, this would be undesirable in a dehydrated child

The usual sterile procedure is used, and the injection into the abdomen[10] is made at the usual point

RESULTS

Solutions of dextrose prepared in this manner were first given intraperitoneally in cases of intoxication with dehydration They were so uniformly successful that we have gradually extended their use to many other conditions Talbot[11] states that the dextrose reserve of the body lasts twenty-four hours After this, then, when fat is used, as there is now insufficient sugar for the oxidation of fats, ketosis results Ketonic acids combine with circulatory bases, and a diminution of the available alkali reserve results The carbon dioxide combining power of the blood is reduced and a compensated acidosis results When the acidosis becomes more severe and the patient has air hunger and cherry red lips, there is an uncompensated acidosis which is best corrected by the administration of dextrose

We therefore give dextrose in any disturbance in which there is a question of insufficient nourishment besides the nutritional disturbances in intoxication and marasmus in pneumonia, both lobar and bronchial, in pyelitis, and in postoperative conditions

In no cases have we had any disturbances of any kind following the intraperitoneal injections This method has now been in use for the last nine months, which we judge to be ample time for a fair trial

The intraperitoneal injections are never given in larger quantities at one injection than 100 cc However, as 100 cc is only about half the usual fluid intake of a child at one feeding, the injection, to be effective, must be repeated frequently It is rather astonishing how rapidly the fluid is absorbed It is usually believed that twelve hours[12] is the minimum, but in one case we gave a child six intraperitoneal injections of 5 per cent dextrose daily for four days

CONCLUSIONS

1 A 5 per cent solution of dextrose may be given intraperitoneally without reaction of any kind, if the dextrose is prepared by dry sterilization

2 The use of dextrose intraperitoneally may be extended to some acute infections and to postoperative conditions as well as the nutritional disturbances

3 To be effective, the dextrose should be given in 100 cc quantities, repeated frequently

30 North Michigan Avenue

POSTVACCINATION TETANUS AND ITS PREVENTION

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Tetanus as a complication of vaccination against smallpox, while rare, has occasionally developed in the United States During the past fourteen years cases have occurred in thirty-two states and in the District of Columbia The complication, however, is almost unknown in Europe and the same condition appears to be true for other portions of the world, although so far as our information goes traumatic tetanus occurs everywhere

CHARACTER OF THE ATTACK

The symptoms of postvaccination tetanus do not differ from those of severe traumatic tetanus The onset is usually from eighteen to twenty-four days subsequent to the vaccination The first symptoms noted may be difficulty in swallowing or in opening the jaws, or stiffness of the muscles of the back or limbs Trismus, general spasticity, opisthotonos and generalized convulsions usually develop rapidly From 75 to 80 per cent of the cases prove fatal, many of them within twenty-four hours from the onset of symptoms

SOURCE OF THE INFECTION

In 1917 McCoy and Bengtson[1] demonstrated the presence of tetanus organisms on bone-point scarifiers such as had been employed in vaccinating a number of persons who developed postvaccination tetanus In 1925, the same organism was demonstrated in bunion pads such as were found to have been used in several cases in which the complication[2] had developed Extensive tests of commercial vaccine virus both by the manufacturers and by the Hygienic Laboratory have uniformly failed to demonstrate the presence of *B tetani* Various methods that were found capable of detecting the presence of small quantities of tetanus spores when intentionally introduced were employed Needles, tubes, dressings and antiseptics have been repeatedly examined for tetanus, but with negative results except in the two examples noted One is therefore left to conclude that the infection is due to accidental contamination of the lesion

In this connection it is of interest to note that those states which have had the greatest number of cases of postvaccination tetanus are not those which have the highest rates from traumatic tetanus There is, however, considerable epidemiologic evidence which indicates that special conditions are necessary before postvaccination tetanus will develop, even though the specific organism is present in the lesion For instance, there is no apparent reason for concluding that tetanus organisms, whatever their source, should never gain entrance to secondary vaccinations, yet without exception the cases for which the data are available have followed primary "takes." Likewise, reference to the accompanying table will show that the ninety-eight cases which we have investigated have in most instances followed large insertions, and that in every case the vaccination area was covered for all or a portion of the active course of the infection by some type of shield or dressing.

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[12] Dewzer B S and Anderson A F The Absorption of Fluid Injected into the Peritoneal Cavity Am J Dis Child **21** 565 (June) 1921

[1] McCoy G W and Bengtson I A Notes on the Detection of B Tetani Bull 115 Hyg Lab U S P H S 1918 pp 1 37

[2] Armstrong Charles Tetanus Following the Use of Bunion Pads as a Vaccination Dressing Pub Health Rep **40** 1351 1357 (June 26) 1925

The information set forth in the table is not susceptible of statistical treatment, since the relative number of persons vaccinated by various methods in the United States during the period of this study is not known. However, it is known that a considerable number have been vaccinated with small insertions and without the use of dressings, and it would seem that the absence of postvaccination tetanus in this group is significant. Moreover, local studies have been made wherein the numbers vaccinated by various methods could be determined and it has been found that a disproportionate number of cases of postvaccination tetanus followed certain vaccination procedures which tended to produce severe local takes.

DISTRIBUTION OF CASES BY SEX, AGE AND TIME OF OCCURRENCE

The fact that postvaccination tetanus tends to occur only after primary vaccinations explains the preponderance of cases in the autumn among children from 6 to 7 years of age, since in this country primary vaccinations are most commonly performed when a child enters school. It seems to be questionable whether or not this is the best time to perform first vaccinations, since children of this age usually play about the streets and gardens and their sanitary sense is largely undeveloped. Boys are somewhat more subject to the complication than are girls. In Europe, with its relative freedom from postvaccination tetanus, primary vaccinations are largely performed during the first year of life. It is a well established fact that infant vaccinations tend to be less severe than do primary "takes" in later life. Moreover, the infant is confined to an environment less likely to be contaminated with tetanus organisms, and in addition is protected against smallpox during a period in which he would otherwise be susceptible. Secondary vaccination performed on entrance to school, as is done in most European countries, would of course be almost without risk.

INFLUENCE OF SHIELDS AND DRESSINGS ON THE "TAKE"

The harmful influence of shields and dressings is apparently not fully realized by all vaccinators. Such appliances, usually held by adhesive straps, tend, when swelling occurs, to restrict the flow of blood and lymph, thus leading to stasis. This effect is especially marked when shields are employed, since they must be rather snugly applied, as otherwise they move and come in contact with and injure the lesion. Artificial coverings, moreover, retain heat and moisture, which tend to soften the vesicle and thus lead to its rupture and the exudation of serum or pus. This accumulation of moist exudate tends to produce maceration and constitutes a medium for the growth of proteolytic bacteria. Even though the original insertion be small, it will usually develop under these conditions until it fills the shield. Gauze dressings become embedded in the exudate, and when they are removed the vesicle is ruptured. Under the influence of dressings, especially when neglected, a foul smelling necrotic ulcer may develop, which seems to be favorable to the development of tetanus, since a foul odor was noted prior to the onset of tetanus in approximately 75 per cent of the cases investigated as to this point. We have not encountered such foul smelling lesions in vaccinations treated openly. It is of interest to note also that we have failed to find any reference to tetanus complicating smallpox, a disease in which the body may be covered with lesions resembling a vaccination, but which are of necessity treated openly.

INFLUENCE OF DRESSINGS IN EXPERIMENTAL POSTVACCINATION TETANUS

Francis,[3] in 1914, attempted to produce postvaccination tetanus in eight monkeys each vaccinated in five places with a virus heavily contaminated with heated tetanus spores. Severe "takes" resulted, but tetanus did not develop. Two calves vaccinated on the abdomen and thighs with a similar mixture likewise failed to develop the disease. In 1915, Anderson[4] tried a similar experiment, using guinea-pigs, but with uniformly negative results. Dressings were not employed in these attempts. In view of the epidemiologic evidence as shown in the table, it was therefore deemed desirable to attempt again to produce the complication experimentally, employing various types of commercial shields and dressings.

Vaccination Methods Used in Cases Developing Tetanus

Method of Insertion	Type of Dressing Used							
	Shields	Gauze	Bunion Pads	Gauze and Shield	No Dressing Early Shields Later	Adhesive Bandage	No Dressing	Total
Abrasions (¼ to ⅝ inch) or scarifications	30	22	13	1	1			67
Multiple linear incisions 2 to 12 in one locality	7	6	2	2	1			18
Single linear incision	2	1		1		1		5
Unknown	5	3						8
Total	44	32	15	4	2	1	—	98

Experiments with Monkeys.—Twenty-three monkeys were vaccinated with a single insertion of vaccine virus heavily contaminated with *B. tetani.* All the lesions were covered for the first eighteen hours. At the end of this period the dressings were removed from the control animals, while they were left undisturbed in the remainder. Celluloid shields (cap type), a bunion-pad type with a celluloid cover, and a dressing consisting of several layers of gauze covered with a perforated adhesive strip were employed. The dressings were held in place by a 3-inch band of adhesive plaster encircling the body. A hole was cut in the adhesive plaster to accommodate the dressing so as to permit its usual ventilation. In the case of the shields, a covering of light wire gauze was necessary to prevent the animals tearing the celluloid away. Among fifteen animals on which the dressings were allowed to remain, eleven, or 73.3 per cent, developed tetanus in from seven to thirteen days, while among eight animals similarly treated but without dressings after eighteen hours there was one case, or 12.5 per cent. The symptoms in this case came on relatively late, appearing on the eighteenth day. All the cases were fatal.

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[3] Francis, Edward: Laboratory Studies on Tetanus, Bull. 95, Hyg. Lab. U. S. P. H. S., 1914.

[4] Anderson, J. F.: Postvaccination Tetanus: Studies on Its Relation to Vaccine Virus, Pub. Health Rep. **30**: 2111-2117, 1915.

There was a marked difference in the character of the "takes" in the animals with and without dressings In the former the lesions were deep, moist, necrotic and foul smelling, while in those without dressings after eighteen hours, the lesions were moist for only a few days at most, then becoming crusted and proceeding to heal The one control animal which developed tetanus was a wild creature, when approached he would spring to the farthest corner of his cage and in this way repeatedly traumatized the vaccination At the time of his death the lesion had healed considerably, but was covered by a scab one-half by three-fourths inch, beneath which was a small amount of pus There was no foul odor

Experiments with Rabbits—Twenty rabbits were vaccinated with the same virus-tetanus mixture in a single insertion 1 inch in diameter Half of the animals were without dressings after eighteen hours, while in the remaining half the dressings were left in place throughout the experiment Among the ten animals with dressings, there were eight which developed fatal tetanus in from nine to fifteen days, while among the controls there were no cases Two of the control animals died of symptoms resembling snuffles, tetanus toxin could not be demonstrated at the vaccination sites on these animals

The rabbits all developed severe "takes" At the time of death of the animals with dressings the lesions were moist, but the accumulation of exudate and the necrosis was much less than that noted in the monkeys In only one instance was a foul odor noted In the rabbits without dressings, the lesions soon developed firm dry scabs and proceeded to heal

Diagnosis of Tetanus in Animals—The symptoms of tetanus in animals are a counterpart of those seen in tetanus in man, which, as is well known, are rather characteristic The diagnosis was, however, confirmed in every case except one monkey by excising and macerating the "take" in 100 cc of saline solution and then injecting white mice with from 0 4 to 0 5 cc of this extract The criterion of the presence of tetanus toxin was death in the mice, while controls with the same dose plus tetanus antitoxin remained well

PROPHYLAXIS

It is realized that the results secured in animal experimentation do not of themselves constitute conclusive evidence when applied to man However, the significance of these results is hardly to be doubted when their accord with the epidemiologic evidence concerning ninety-eight cases in man is considered In fact, the evidence seems strong enough to suggest that the practical elimination of postvaccination tetanus may be accomplished by a general attention to certain fundamentals of vaccination, the most important of which is probably the avoidance of the use of shields, or of other dressings save in exceptional instances

Vaccination Procedure—The essentials of a proper technic will be briefly considered in the order of their probable importance [5]

1 Dressings One should not apply any local covering, and should warn the patient against doing so The lesion should be kept cool and dry When this procedure follows a small properly made insertion, the lesion will usually retain its own natural covering—the epithelium itself—and develop a dry scab without having become an open lesion at any time Should an open lesion develop, a dressing may be desirable for a few days A large square consisting of a few layers of gauze pinned to the inside of a loose fitting sleeve is probably best If applied to the arm the dressing should be large and the adhesive straps loosely applied and as far from the vaccination site as possible

2 Insertion Second only in importance to the dressing is the character of the insertion, which should be small, never more than one-eighth inch in its greatest diameter, and preferably made by some method that does not remove the epidermis The multiple pressure method advocated by Dr J P Leake [6] is admirable This method consists in making from twenty to thirty very superficial pricks of the skin through a drop of virus in an area not more than one-eighth inch in diameter A sharp new needle is used The virus is wiped off immediately

3 Method of Cleaning the Skin Many solutions are satisfactory The important thing is gentleness Too vigorous rubbing abrades the epidermis and may enable the virus to multiply outside the intended insertion

4 Site The insertion of the deltoid is probably the best location for a vaccination Leg vaccinations in persons up and about are contraindicated

5 Age Primary vaccinations are best performed during the first year of life, since at this age the lesion is less subject to injury and accidental contamination and usually runs a milder course than do primary vaccinations performed at a later age

SUMMARY

1 Epidemiologic evidence indicates that large insertions and the use of shields and dressings predispose to postvaccination tetanus in man

2 Shields and dressings markedly favor the development of postvaccination tetanus in monkeys and rabbits vaccinated with a virus artificially contaminated with *B tetani*

3 A proper vaccination is defined as one in which the insertion is not more than one-eighth inch in its greatest diameter and which is made by some method that does not remove or destroy the epidermis Such insertions, when treated openly, have never as far as we are aware, been followed by postvaccination tetanus

Twenty-Fifth and E streets NW

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[5] Those desiring a detailed consideration of the many phases of vaccination should consult Dr J P Leake s questions and answers on small pox vaccination

[6] Leake J P Questions and Answers on Smallpox Vaccination Pub Health Rep **42** 221 238 (Jan) 1927

Mental "Mechanisms"—Freud, in elaborating his psychoanalytical theory has introduced a number of technical terms to describe mental processes which take place unconsciously These are now so familiar that they require no explanation By repression painful conflicts become unconscious, and the repressed material causes, by conversion, hysterical symptoms, by dissociation, fugues, by projection, phantasies and delusions, by regression a return to infantilism and so forth On the other hand, by sublimation, the repressed energy finds an outlet in more healthy ways, as hard work or altruistic effort These terms are part of a large vocabulary of words in everyday use in Freudian psychology I have always felt an objection to the use of words having a spatial meaning in reference to mental processes, though they may be unavoidable Breuer says "All too easily one gets into the habit of assuming that behind a substantive there is a substance' That we are using metaphors in speaking of mental processes is forgotten and the metaphor itself is manipulated as a material thing—Pierce, Bedford Subconscious Factor in Medicine, *Lancet* Dec 10 1927

THE INGESTION OF RED BLOOD CORPUSCLES BY TRICHOMONAD FLAGELLATES

OBSERVATIONS SHOWING THAT IT IS NOT EVIDENCE OF PATHOGENICITY *

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The literature on intestinal protozoa contains a number of references to the ingestion of red blood cells by both amebas and flagellates By many the ingestion of red blood cells is considered evidence of pathogenicity, by others the red cells are looked on merely as adventitious food particles The experiments described in this paper were undertaken in an effort to determine which of these positions is the correct one

For many years one of the principal criteria for distinguishing between *Endameba histolytica* and *Endameba coli* has been the presence of red blood cells in the former and their absence in the latter There is evidence, however, that under certain conditions *Endameba coli* may ingest red blood cells [1] The endameba of the mouth, *E gingivalis,* which was once accused of being responsible for pyorrhea alveolaris, apparently lives principally on leukocytes and bacteria, although Smith and Barrett [2] record the ingestion of red cells and Howitt [3] finds that the washed red cells of the guinea-pig are eaten by specimens in artificial culture

Various investigators have reported the ingestion of red blood cells by trichomonad flagellates The trichomonad flagellates that live in the human intestine may possess three, four or five flagella The five-flagellate organisms, known as pentatrichomonads, were first recorded in patients suffering from diarrhea or dysentery and were found to have the habit of ingesting red blood cells Derrieu and Raynaud [4] first reported this type in cases of dysentery in Algiers, Chatterjee [5] found it in thirty cases of chronic dysentery in Bengal, Wenyon and O'Connor [6] cite one case in the Near East, Haughwout and de Leon [7] found it in a case of acute dysentery in Manila, and Kofoid and Swezy [8] observed it in three patients with histories of chronic diarrhea These records appear to indicate that the diarrheic or dysenteric condition was due to the presence of the flagellate, and the ingestion of red blood cells seemed to complete the evidence of its pathogenicity However, pentatrichomonads have been found in a person who never exhibited diarrhea or dysentery,[9] and it seems probable that the red cells contained in these organisms were ingested because they chanced to be present in the intestinal contents

Most of the trichomonads of the human intestine have four flagella That this type also may ingest red blood cells is proved by the observations of Kessel,[10] who found red cells in four-flagellated trichomonads from the stool of a patient suffering from bacillary dysentery, by Reichenow,[11] who reports that this type will ingest red blood cells in artificial cultures, and by Wenyon,[12] who states that he observed red blood cells in specimens passed by a patient suffering from bacillary dysentery and in cultures containing rabbit blood Kessel [10] also reports the presence of red cells in four-flagellated trichomonads from the urine of a patient passed at the time of menstruation

MATERIAL

In my experiments, eight species of trichomonads have been employed These are *Trichomonas hominis* from the intestine of man, *Trichomonas buccalis* from the mouth of man, *Trichomonas* sp from the intestine of the monkey, *Trichomonas macacovaginae* from the vagina of the monkey, *Trichomonas felis* from the cat, *Trichomonas muris* from the rat, *Trichomonas gallinarum* from the cecum of the chicken and *Trichomonas augusta* from the rectum of the frog These were all grown in test tubes in serum-saline-citrate medium made up as follows Loeffler's dehydrated blood serum, 0 5 Gm, was added to a solution of 0 7 Gm of sodium chloride and 1 Gm of sodium citrate in 100 cc of distilled water All of the trichomonads were incubated at 36 C except those from the frog, which were kept at room temperature Fresh blood was obtained from man, the dog, the cat, the rabbit, the rat, the guinea-pig and the mouse

The experimental material was set up as follows Twenty-one tubes of culture medium were inoculated with each of the eight species of trichomonads Immediately afterward fresh blood from the seven mammals listed in the preceding paragraph was added, three drops from each mammal being added to each of three tubes The material was then incubated for twenty-four hours except in the case of the trichomonads from the frog, which were examined at the end of five hours because of the rapid breaking down of the red cells In every case a sample from the bottom of each tube was confined under a coverglass and the presence or absence of red cells and the number if present in each trichomonad was recorded for the first hundred specimens encountered on the slides

The data obtained are presented in the accompanying tables All the species of trichomonads ingested red blood cells from all the species of mammals used For example, table 1 shows that 50 per cent of the first 100 trichomonads from the intestine of man had not ingested human red blood cells, 28 per cent had ingested one, 18 per cent had ingested two and 4 per cent had ingested three As many as seven red cells were found within a single trichomonad, this was true of a trichomonad from the intestine of man that ingested seven red cells from the cat The largest number of trichomonads that ingested red cells occurred in the case of specimens from the mouth of man, 96 per cent of which ingested one or more red cells from the rat

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* This work was aided by a grant from the Committee on Scientific Research of the American Medical Association

* Owing to lack of space this article is abbreviated in THE JOURNAL by the omission of nine tables The complete article appears in the author s reprints

[1] Lynch K M Ingestion of Red Blood Corpuscles by an Intestinal Ameba with Eight Nucleated Cyst, Am J Trop Med **4** 43 48 (Jan) 1924

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[3] Howitt B F Experiments with Endameba Gingivalis (Gros) in Mixed Bacterial Cultures Univ California Pub Zool **28** 183 202 1926

[4] Derrieu and Raynaud Dysenterie chronique a flagelle nouveau Bull Soc de path exot **7** 571 574 1914

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[6] Wenyon, C M, and O Connor F W Human Intestinal Protozoa in the Near East London John Bale Sons & Danielsson Ltd 1917

[7] Haughwout F G and de Leon W On the Ingestion of Erythrocytes by Pentatrichomonas Sp Found in a Case of Dysentery Philippine J Sc **14** 207 219 (Feb) 1919

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[9] Hegner R W The Presence of the Human Intestinal Flagellate Pentatrichomonas Ardindelteili in a Healthy Carrier Am J Hyg **5** 554 555 1925

[10] Kessel J F The Ingestion of Erythrocytes by Trichomonas Hominis and Its Occurrence in the Pus of an Amebic Liver Abscess, J Parasitol **11** 151 152 (March) 1925

[11] Reichenow, E Die aufnahme roter Blutkörperchen durch Trichomonas Arch f Schiffs u Tropen Hyg **29** 519 525 1925

[12] Wenyon C M Protozoology New York William Wood & Company 1926

The variations in the percentages of red cells from the different species of mammals ingested by different species of trichomonads suggest the question whether there is any real relation between the type of red cells and their ingestibility If the animals from which blood was obtained are arranged in order according to the percentage of trichomonads that ingested these red cells, the results obtained are as indicated in table 9 This table, for example, shows that more trichomonads from the intestine of man ingested red cells from the cat than from any other of the seven species of mammals, that red cells from the rabbit were second in number as regards ingestibility, and that those from the mouse occupy third place When the data arranged in this way are added together, the totals indicate that more trichomonads ingested red cells from the rabbit than red cells from any of the other mammals Next in order come the mouse, the rat, the cat, man, the dog and the guinea-pig Measurements of the red cells from these mammals were made and are presented at the bottom of table 9 It is evident that more of the smaller red cells that is, those from the rabbit, the mouse, the rat and the cat, were ingested than the larger red cells, that is, those from man, the dog and the guinea-pig This suggests that size may be a factor that determines the extent to which the red cells of a particular animal are ingested by trichomonads

Table 10—*Percentage of Trichomonads that Ingested Red Cells According to the Number Ingested by Each Regardless of the Source of the Red Cells*

	Number of Red Cells Ingested							
Source of Trichomonads	0	1	2	3	4	5	6	7
Intestine of man	58	23 4	12	4 8	1	0 4	0 14	0 14
Mouth of man	47 1	33 7	9 8	7 1	1 7	0 4		
Intestine of monkey	89 9	7 6	1 5	0 57	0 28	0 14		
Vagina of monkey	73	17 7	6 15	2.4	0 4	0 28		
Intestine of cat	54 5	28 6	10 04	5	1 14	0 4	0 14	
Cecum of rat	81 5	14 8	3 1	0 57				
Cecum of chicken	90 3	8 4	0 84	0 28	0 14			
Rectum of frog	92 5	4 15	1 86	0 71	0 4	0 14		

The percentages of trichomonads from the various sources that ingested red cells, regardless of the source of these red cells, are given in table 10, according to the number ingested by each These percentages bring out clearly the differences in the number of red cells ingested by the eight species of trichomonads They indicate that the trichomonads of the frog at room temperature are the least voracious and that those from the intestine of the monkey and the cecum of the chicken come next, whereas those from the intestine of the cat and the mouth of man not only ingested red cells most frequently but repeated the process until a considerable percentage of the organisms contained two or more specimens each

It is well known among protozoologists that protozoa exercise a certain amount of selection with respect to the ingestion of food particles This suggests that another factor that may account for the great variation in the numbers of red cells ingested may be the character of the red cells or of the plasma which was added to the culture medium with them It was noted that the trichomonads multiplied more rapidly in the cultures to which blood was added than in other cultures made up at the same time but lacking the blood The numbers of trichomonads that appear in cultures varies greatly under so-called normal conditions, hence it is possible and even probable that the variations as presented in the tables might disappear if a large enough series of observations were made

SUMMARY

The object of the experiments described in this paper was to determine to what extent various species of trichomonads will ingest red blood cells from various species of mammals and the bearing of these data on the pathogenicity of the flagellates Eight species of trichomonads from as many species of animals were obtained in serum-saline-citrate culture medium Blood from seven different species of mammals was added The number of red cells ingested by each species of trichomonad was determined It was found that every species of trichomonad used ingested red cells from each of the seven species of mammals Considerable variation was noted with respect to the percentage of trichomonads of the different species that ingested red cells of the different types of mammals and the number of red cells ingested by each flagellate, this number ranging from one to seven These data indicate that the larger the size of the red blood cell, the more difficult it is for the trichomonad to ingest it This may account for some of the variations observed It is suggested that the character of the red cells or of the plasma introduced into the cultures may also influence the percentage of red cells ingested

The conclusion is reached that red cells are accepted by the species of trichomonads used just as are other food particles in their environment, such as bacteria and organic debris, and that the habit of ingesting red cells cannot be used as evidence of pathogenicity

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HEMATURIA DUE TO SHOE DYE POISONING

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Since the papers of Muehlberger[1] and Patek[2] have appeared, attention has been called to the possibility of shoe dye poisoning being the cause of otherwise unexplained cyanosis appearing in previously healthy, normal persons Two such cases have appeared in Syracuse within the last six months, and in the last case, to be described presently, an unusual feature heretofore undescribed, was present, namely, gross bleeding from the urinary tract

The toxic effect of aniline dye poisoning is usually cardiac The conductive mechanism of the heart is disturbed and the blood pressure becomes low The constant feature of cyanosis is explained both by the resultant impaired circulation and by the presence of para-aminophenol in the alkaline medium of the blood and tissues

In the acute stages of aniline dye poisoning, there is a relative increase in erythrocytes, in hemoglobin and in oxygen capacity Contrary to the opinion of many,[3] methemoglobin bands have not been seen when the blood of these patients has been examined microscopically

Malden,[4] in studying the toxic effect of this type of poisoning on the blood, demonstrated basophilic granulations in the red corpuscles. Much importance should be attached to this phenomenon, as it is the earliest noticeable sign in the blood, just as it is in lead poisoning.

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[1] Muehlberger C W Shoe Dye Poisoning J A M A **84** 1987 (June 27) 1925

[2] Patek A J Aniline Shoe Dye Poisoning J A M A **86** 944 (March 27) 1926

[3] Young A G Muehlberger C W and Meek W J Experimental Studies of Acute Aniline Poisoning J Pharmacol & Exper Therap **27** 101 (March) 1926 Young A G Hematologic Studies of Aniline Poisoning ibid p 125 Young A G and Wilson J A Toxicologic and Hematologic Studies of Acetanilid Poisoning ibid p 133

[4] Malden W Some Observations on Condition of Blood in Men Engaged in Aniline Dyeing J Hyg **7** 672 1907

In the cases described, the urine is brown, turbid and smoky. According to Young and Meek,[3] it contains para-aminophenol and not methemoglobin. Red blood cells are rarely seen.

The postmortem does not show anything abnormal except chocolate colored blood.

REPORT OF CASE

B. S., a youth, aged 19, employed as a clerk, strong and athletically inclined, with a negative past history, came under my care because of a marked cyanosis. He had put on a pair of shoes which had been dyed black that morning. An hour later he complained of some nausea, felt light-headed and became very irritable. He was told that his lips and ears were blue. This blueness seemed to increase during the afternoon. When he presented himself for examination he complained of dizziness. He stated that his head seemed to be held in a vise, and, because of the increasing blueness of the lips, ears and finger tips, he was very much alarmed.

Examination revealed evident cyanosis. The entire skin was dusky and the eyeballs were injected. The mucous membranes of the mouth and throat were congested. The respiratory rate was increased to 20 a minute, otherwise the lungs were normal. The heart sounds were somewhat feeble. There was no arrhythmia and the blood pressure was 95 systolic and 55 diastolic. The pulse rate was 90. The temperature was normal.

The hemoglobin was 100 +. The red blood corpuscles numbered 6 200 000, the white corpuscles 7 500 with a normal differential count. The nonprotein nitrogen was 40 mg. per hundred cubic centimeters. The Wassermann reaction was negative. Venipuncture produced blood which was unusually dark. The urine was essentially normal with the exception of its dark brown color. Microscopic examination did not reveal any formed elements.

The patient was put to bed, his feet were washed with a dilute alcoholic solution, and elimination treatment was started. The following day he complained of great frequency with dysuria and the urine became very bloody. Discomfort associated with urination increased and blood clots appeared in the urine. Microscopic examination did not show any renal casts or epitheliums, but the specimens were loaded with red blood cells. This hematuria kept up for four days and then gradually diminished in intensity. At the end of the second week there were still many red blood cells in the urine, but blood was not detected macroscopically. At the end of the third week only isolated red blood cells were to be seen. At no time was the output diminished. The blood pressure remained low and there was no edema. The nonprotein nitrogen remained at the level first found, 40 mg. per hundred cubic centimeters.

The cyanosis disappeared after the first day and subjectively, with the exception of urinary discomfort, the patient felt much better after the first twenty-four hours.

COMMENT

Mention is not made, anywhere in the literature, of the possible effect of para-aminophenol on the renal structure of the body. In the case cited, this was a predominating feature and at first caused some alarm. Whether the kidney, ureter or bladder was particularly sensitive to the dye is a question. Cystoscopic examination was not done to determine the source of the bleeding. In the sixty-one cases reported to date urinary injury evidently was not present, recovery ensuing in almost all the cases in the course of a few days after the dye derivative had been entirely eliminated.

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VENEREAL DISEASE CONTROL

PROBLEMS AND METHODS *

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THE STATUS OF THE VENEREAL DISEASE CONTROL MOVEMENT

In the United States, the movement for the control of syphilis and gonorrhea lies today somewhat up-grade from the bottom of a declivity, down which it gently subsided from the epochal peak of effectiveness reached during the World War. In this somewhat fungoid rise and cataclysmic fall, it has been true to the emotionalism of American reformatory and constructive tradition. In marked contrast, the slower progress of our more phlegmatic overseas brethren, the British, whose national program scarcely assumed distinct form during the war, has in the end brought them apparently, or at least measurably, farther than our own. Today the English vital statistics are measuring, in what appear to be fairly trustworthy terms, a decline of nearly 50 per cent in the incidence of syphilis and gonorrhea in the British Isles. Belgium, Germany and France are reporting comparative and in some respects confirmatory data. The United States is silent save for the ready voice of assertion based on impression rather than facts. The ebb tide of a fiscal program built for war emergency has left the skeleton of a great public health campaign high and dry on the shoals of an unenlightened retrenchment policy.

Granted that there may have been some waste, duplication and lack of plan, as in all our war-time expenditure, does that justify the burial of the conception of control of two great disease scourges in the remnants of the war-created machinery through which the movement for the moment found expression? Is the movement for the control of syphilis and gonorrhea merely a matter of war emergency, and does peace justify its return to the obscurity that enveloped it before 1914? No sanitarian could concede such a point of view for a minute. A disease such as gonorrhea, almost as common as measles, which affects from 50 to 60 per cent of males at some time in their life history, and whose complications are responsible for a considerable part of the specialties of gynecology and urology, is not a mere war emergency. A disease such as syphilis, which ranks among the foremost if not actually the first of all the causes of death which affect mankind, a disease which has five million presumptive victims in the United States alone, which produces 13 per cent of the insanity in our asylums and an unrecorded toll of prenatal mortality, deafness, visual handicap and blindness, cannot be returned to the obscurity of peace. It is a duty of the most unmistakable sort for an association such as this one, concerned with the protection and furtherance of the public health, to support and uplift by every possible means the hands of those who are trying to bring into the struggle with venereal disease an orderly and sustained effectiveness, a permanent field and headquarters organization and facilities from which alone can come results such as are now being published to the world from the other side of the Atlantic.

What are these results? Is there really anything in all this effort to control what the cynical among us

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* Read before the special session on venereal disease control at the fifty-fifth annual meeting of the American Public Health Association, Cincinnati, Oct. 20, 1927.

believe we shall always have with us? Sir Arthur Newsholme, on the basis of the British mortality figures from 1901 to 1925 and the British venereal disease clinic registration from 1918 to 1925, finds that the crude annual death rate from syphilis at all ages, based on the registrar general's review for 1924, has fallen from 53 in 1901 to 33 in 1924. Mortality from general paralysis of the insane has fallen from 70 in 1901 to 40 in 1924, that from tabes dorsalis has slightly increased from 13 in 1901 to 19 in 1924, aneurysm has decreased from 30 to 26, the combined rate from 166 to 118, and relative figures from 100 to 71, in this lapse of time. The most striking change is apparent beginning with 1919, when all the rates exhibited the most pronounced drop apparent in years, a decline that has been held consistently or become more pronounced between 1919 and 1924.

Sir Arthur Newsholme points out that a revision of these figures, such as Osler suggested, to include the occult death factor from syphilis, would place the disease, with cancer, tuberculosis and pneumonia, as one of the four chief causes of death. The drop in mortality figures has taken place in the face of improved diagnosis and more complete registration. The decline in death rate of 1924 as compared with 1921 amounts to 29 per cent, and when 1917 is compared with 1924 it amounts to 32 per cent. Sir Arthur indicates that the changes in mortality from late complications are an index of the effectiveness of treatment begun a decade ago, while the more recent changes in registered mortality from syphilis as such indicate the effectiveness of the World War campaign.

An equally interesting evidence of the effectiveness of the British antivenereal campaign is found in the decline of new cases of gonorrhea and new cases of syphilis in the face of an increased number of clinics and a steadily increased total attendance from 1918 to 1925. In 1917 the total number of government clinics was 113, increased to 193 in 1925. The total attendance increased from 204,692 to 1,719,148. New cases of syphilis in 1918 were 26,912, in 1919, 42,134, in 1925, 22,588. Gonorrhea, on the other hand, has shown a smaller decline, probably because of the lesser effectiveness of medical treatment control in this disease. An interesting incidental observation concerns the comparison of the experience of Portsmouth and Birmingham. In both these cities there has been a fairly parallel and equal diminution of cases of syphilis and gonorrhea, yet in one of them disinfection as a prophylactic has been publicly advocated and in the other it has not. The author compares his observations with those of Bayet[1] of Brussels, in which essentially the same experience is recorded for Belgium. The chief feature of the work accomplished in both countries has been prophylaxis by treatment. Bayet concludes that arsenical medication has reduced the contagious period in syphilis from three fourths to four fifths, although Newsholme questions the accuracy of this estimate. As they stand, the figures constitute the greatest encouragement to workers for venereal disease control that has thus far appeared.

PREVENTIVE PROBLEMS IN THE FIELD OF VENEREAL DISEASE CONTROL

Syphilology has a well defined preventive phase, thus far all too little stressed in teaching and propaganda. The control of gonorrhea has a similar side, less developed, however, because of the lack of a specific form of treatment which rapidly reduces infectiousness, such as is available in dealing with syphilis. For increased emphasis on the preventive aspects of syphilis the medical school must be responsible. It must shift its teaching point of view from outspoken consequences to prodromes and obscure beginnings. Instead of permitting the neurologist to leave the impression that tabes and general paralysis are the most significant aspects of neurosyphilis, the syphilologist must emphasize the fact that symptomless neurosyphilis detected only by examination of the spinal fluid years before the onset of either consequence is really the sort with which the practitioner should busy himself. Instead of encouraging the professor of medicine to give the impression that the candy-bucket liver, the bulging aneurysm and the laboring decompensated heart are the most significant aspects of cardiovascular syphilis, stress must be laid on the very earliest and hence treatable signs of involvement of the aorta, the tambour second sound and the symptoms of precordial stress. Every time the medical student is permitted to underrate a chancre or to treat a secondary efflorescence as merely skin deep by symptomatic methods, another patient enters the medical wards and the asylums of the future, another express train crashes in the darkness, another corporation totters, as syphilis pulls loose its central peg. Until medicine is taught preventively to the physician of the future, the individual side of the venereal disease problem continues to move under a cloud.

Sooner or later, the venereal disease control movement must face squarely the issue of medical prophylaxis of the venereal diseases. It will not do to continue indefinitely the practice of regarding a method that displays the effectiveness of mechanical and chemical prophylaxis as merely a war-time expedient. To wait until a person develops disease, when even one in a hundred might be saved by some easily applied medical measure, is an anachronism in public health procedure for which morals cannot long stand sponsor. Just how the problem will be solved, I cannot tell you. It is in process of an uncontrolled and unstudied solution by way of the corner drugstore and the manufacturers of birth-control devices and prophylactic packets. Its controlled study and intelligent use is to my mind largely a matter of education, support and administrative detail. The very clinic that treats venereal disease might become a center for the application of at least a partially effective prophylaxis.

Educational methods in the control of venereal disease have perhaps had their ablest exponents and their most thoroughgoing employment in this country. It may be properly regarded as a glorious tradition that the United States entered the war on the side of the best rounded program for the prevention of syphilis and gonorrhea ever devised. It took into account and utilized every educative, moral and constructive influence that could be brought to bear on the problem of keeping young men and women within sexual bounds. It is then indeed a tragedy of unfulfilment that today we have not a single figure that I know of to place beside the figures of continental countries in which this educational phase received so much less emphasis, to prove that our way bears the better fruit. The European emphasis has been on treatment as the great preventive, and their figures seem to be proving that it works and works well. We who have laid stress on education are, then, directly challenged to prove that the brochure, the leaflet, the lecture, the lantern slide and movie film, the parent-teacher league, the playground and social worker, on which hundreds of thousands of dollars have been spent can compare in efficacy with an equal sum spent on arsphenamine and syringes and the personnel to use them I may give it as my personal credo that they are worth the cost, if not to the obliteration of syphilis and gonorrhea, then to the elevation of mankind above the muck in which those diseases thrive But it remains a credo and not an established fact The preventive worth of educational propaganda should be removed as rapidly as possible from the conjectural and impressionistic field in which it now lies and placed if possible on the sounder factual basis already developing about the preventive value of treatment

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[1] Bayet. La lutte contre le syphilis en Belgique, 1926.

PROBLEMS OF TREATMENT

In discussing problems of treatment, one may consider first the woful difference that exists today between the field of gonorrhea and that of syphilis Pray that there may be more gonorrheologists and better ones—and do not pray alone, but go out on the highways and get them Search for and subsidize the laboratory worker who will attack the gonococcus Encourage with pay and academic emolument the clinician who will devote himself to the treatment and teaching of this disease Until there is a method of controlling infectiousness comparable to that available in the treatment of syphilis with arsphenamine, the movement against gonorrhea limps on half a foot The effect is apparent enough in the charts of Sir Arthur Newsholme which show where the drop in venereal disease incidence is taking place—in syphilis, the more treatable and controllable, because the more thoroughly investigated disease, and not in the incidence of gonorrhea

In the syphilologic field, in which, of course, I see the trends more clearly, the tremendous worth of an effective infection-controlling drug has recently been suggested by the studies of Jadassohn and Jeanselme According to Anwyl-Davies, they attribute the decline in syphilis in the countries surrounding France, as contrasted with a recrudescence within France itself, to the French substitution of bismuth, an inferior spirillicide, for arsphenamine Drugs and their evaluation are indeed assuming a striking importance in preventive syphilology, if the difference between the spirillicidal action of arsphenamine and bismuth can make most of the difference between a 50 per cent drop in the incidence of syphilis in Germany, England and Belgium and a 20 per cent rise in the city of Paris Such a picture is probably overdrawn, but the place that drugs take in the control of syphilis is none the less supremely important The problems that involve syphilotherapeutic agents at the present time include especially the following Is the spirochete of syphilis becoming resistant to the agents now in common use against it? There is evidence that the blood Wassermann reaction is more difficult to reverse than it was ten years ago, even with identical technics of treatment and test Relapse seems at times to be assuming a peculiar obstinacy and refractoriness—but this is probably a case of greater alertness and better recognition Longer courses seem at times to accomplish less than short courses did ten years ago, but here again we deal with impression In any event the whole question needs the most searching study, for there is a good deal of experimental evidence leading us to expect just such a move on the part of *Spirochaeta pallida* to meet our new efforts at extermination Relapse should be critically studied, and its infectious forms particularly made familiar to every crossroads doctor, that the spread of the disease by the relapsing carrier may be evaluated and reduced to the lowest terms

Simplification of treatment should be kept constantly in mind, so far as it is consistent with effectiveness—for simple but less efficient methods must not be substituted for slightly more difficult, effective ones It is for this reason that my first instinct is to oblige the malarial therapeutists doubly to prove their ground Their method is costly, restricted in accessibility, complex and limited to the specialist It therefore goes against the desired trend in preventive syphilology He who devises, as in the use of tryparsamide, a less complicated, less painful, less dangerous, more widely usable method of nearly equal effectiveness is the better public servant

The control of the therapeutic testing and efficiency of drugs used in syphilotherapy is an extremely important issue at the present day Not everything that comes in an ampule, labeled and bearing the name of even a reputable manufacturer, is an effective drug "Dud' lots of even the most potent and standard drugs have been shown to exist and to be indistinguishable from the effective lots except by their failure to kill spirochetes The revelations of Dale and White working with a neoarsphenamine in Great Britain and of Voegtlin and others in this country, should lead forthwith to official testing by the Hygienic Laboratory for therapeutic effect of every batch of arsphenamine offered for the market And while I advocate such therapeutic testing, let me say that the tendency to *make the behavior of the laboratory animal the standard*, rather than the action of the drug in man can be overdone The two groups of results, while usually are not invariably parallel, and the court of last resort, especially in testing new drugs, should be the clinic, not the animal house

Side by side with the reduction of complexity in modern treatment methods should come a much needed reduction in toxicity of medicinal agents We have, I sometimes fear, the heavy metal complex in our thinking about syphilotherapy "Bayer 205," devised by the Germans for the treatment of trypanosomiasis, should show us, if its composition is correctly reported, that it is possible to devise parasitotropic drugs of an extremely low toxicity, of which arsenic, bismuth and mercury form no part—for of the ultimate toxic effects of these drugs, administered as they now are over a period of years we know little or nothing at the present day and of their complications we see entirely too much

Eminently practical problems arise about the training of the practitioner of the future for the work of extinguishing syphilis and gonorrhea Here again the medical school must meet a heavy responsibility, to which it is hardly as yet alert Technical proficiency in the manipulation of the syringe and needle is vital to an effective syphilology, and this technical proficiency the present-day practitioner does not possess With the best intent in the world, his efforts at intravenous and intramuscular injection are battery, his lumbar punctures aggravated forms of assault Yet without them there is no modern curative syphilotherapy Syphilologists who attempt to act as consultants find themselves hopelessly handicapped in getting instructions carried out—officers without troops, shoulder-straps but no riflemen Into this gap the medical school must move as rapidly as possible, turning out the common soldiers of syphilology, who by actual experience in a clinic have learned to give an intramuscular injection without having to send the patient home in a ambulance and to differentiate the median vein from the median nerve before injecting arsphenamine. As the complexity of decision in syphilotherapy increases, it is my hope to see a genuine corps of syphilologic consultants develop, such as now exists for tuberculosis, and to see, moreover, centers for both free and pay patients where all the complex and difficultly interpretable examinations necessary to the full study of the individual case may be carried out and their results coordinated by a staff that knows syphilis. This is essentially an amplification of the German advisory center, of which I have often spoken.

The final and the crucial issue of modern clinical syphilology is that of the curability of the disease. While the results of five and ten year checks on treated patients which are now coming in, and the results of animal experiment, give us ground for high hopes, only time, repeated examination, and autopsy on man can give us a final answer. Assertion, optimism and impression, here, as in our statements about the decline in incidence of the disease and the antivenereal value of educational propaganda, play too large a part. Few clinical organizations and few investigators are prepared or are preparing to deal with this problem on an adequate scale. It implies in the first place a *rapport* between the syphilis clinic and a spirochete searcher or sleuth hound in the pathologic laboratory which rarely exists. The work of Warthin is a precious though only partial demonstration of its possibilities. Such contacts should be sought out and developed. Every autopsy on a patient who has had the modern effective treatment for syphilis is worth its weight in gold, and a central laboratory might well be encouraged and subsidized to examine such material with the last degree of thoroughness, whatever its source. In the end the answering of this question, which will finally settle all doubts as to the worth and validity of the medical side of the venereal disease campaign so far as syphilis is concerned, is a matter of follow-up, of which I shall speak in the next paragraph.

RESEARCH ORGANIZATION AND PROBLEMS

Omitting any mention of the directional trends of research in the venereal disease field, I will stress several aspects of the situation that seem to me critical. First is the problem of finance. Research in the venereal diseases, especially syphilis, involving the maintenance of animal hospitals of large size, to say nothing of laboratories, is an expensive affair. Six or seven years ago I estimated the budget of a not particularly pretentious laboratory for this purpose as not less than $30,000 a year and I believe I undershot the mark at the time. The tremendous costliness of research in this country of high wages and living standards is of course one of the most striking contrasts of our situation as compared with that of the European clinics, in which professional overcrowding and a lower living standard make it possible to secure able men at a pittance. It accounts to no small extent for the European origin of our most important syphilologic discoveries. As one of my good friends remarked to me, American clinicians are devoured by their patients, for the available personnel, even in a full-time clinical organization, never quite overtakes the routine, to say nothing of doing anything creative. The sequestration of a group for pure research thus becomes a problem in money getting on a large scale. Private wealth cannot easily be interested in a stigmatized enterprise like that of venereal disease control, bearing a label that is social anathema. Three sources of funds remain open: the great foundations, the public funds and the private contributions of the concerns who make money from the technical perfection and sale of the products of scientific advance in this field. The last mentioned should bear much more load than it has received, and it is to be hoped that the future will see such a *rapport* developing in our field as exists between many of the great industrial concerns and the university groups and research laboratories of this country and Europe.

The avoiding of exploitation and personal aggrandizement might be accomplished through a national association, as in the case of the American Tuberculosis Association, as Moore has suggested, or through the National Research Council.

American research in the venereal disease field, especially on the clinical side, has been notably deficient in long range planning, and the literature is loaded down with reports in which the simplest criteria of control are violated right and left. Clinical research in syphilis takes years, not weeks or months, in consummation, and few clinics have had the foresight or the means to develop records or to stick to a single direction long enough to secure a significant result.

Our greatest weakness, however, is identical with that of all clinical work in medicine at the present time —inadequate follow-up of the sick person. As in the demonstration of the results of propaganda, in which our shortcomings are manifest, so in the demonstration of the effect of treatment and the relative merit of different methods. We are unable to trace results. From 20 to 40 per cent is the best proportion of patients kept under observation of the vast numbers that annually pass through our clinics. The perfection of follow-up becomes therefore one of the critical problems of the syphilis clinic, and social service, through whose aid it is usually done, plus the strong arm of the local public health officials, become two of the most important of research implements in this field of modern medicine.

ETHICAL AND SOCIAL COLLATERALS

The movement for venereal disease control involves at every turn collateral factors in the social and ethical fields which are of vital importance. It is to these I would direct attention in closing. No superficial cynicism can conceal the fact that tremendous issues of personality and character are involved in the handling and disposal of syphilis and gonorrhea as medical problems, and that the disease frontier will move backward and forward under influences totally foreign to the purely medical issues involved. It is in the hope that the physician may become an active participator in the solution of these moral problems, which sometimes seem to lie across the path of direct medical solution of a venereal disease issue, that I would urge all venereologists to participate in the social hygiene movement, to inform themselves on birth control and the family, to avoid cynicism and to have an open mind for ideals in the matter of sex ethics. The physician in venereal disease work is of necessity an advocate of birth control under medical direction. The Wisconsin experiment and Hall's study of it have shown that he can be a capable and even enthusiastic cooperator in the development of checks on marriage which tend to reduce the danger of transmission of infection within this most important of human relationships. It remains now to be seen whether the physician can be interested in other more social phases of venereal disease control, the more inspiring because the more constructive of character and the more expressive of idealism. Can he, for example, be made to tell the sincere and attentive student from the moral side of the tremendous wealth of personal knowledge of the sex habits and thinking of mankind which his work, like that of the priest, brings to his door? Can he be induced to see and study this material with an eye alert for other than purely medical problems? Such a consummation is devoutly to be wished It will come to pass, and medical control of venereal disease will at last stand in its right relation to the scientific and the humanistic study of sex ethics, when the physician sees more science and less moral cock-sureness in the hygienist's program, and the hygienist finds the physician more of an idealist than he has believed him to be The venereal disease problem plays great issues against one another More than one sincere mind has wondered whether, given perfected birth control and no more venereal disease, the bulwarks of the existing moral order will not collapse Toward that inevitable day when decision in sex ethics shall be emancipated from fear of loathsome disease consequences and be determined solely by high principle and a sense of profound responsibility to the partner and the race, hygienist and venereologist should, and will, move in step

THE STANDARDIZATION OF PARATHYROID ACTIVITY

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The method used in the extraction of the parathyroid hormone is a vigorous treatment involving boiling in a solution of a strong mineral acid in order to liberate the activity, possibly as a result of some hydrolytic action[1] The methods that yield the active principles from other endocrine glands do not yield the activity of the parathyroid, whereas the method that has proved successful for the parathyroid is known to decompose most of the other known active endocrine principles

Two methods are available for the standardization of active parathyroid extracts on dogs The method proposed by Collip[2] is based on the production of hypercalcemia, an abnormal condition in normal dogs The method that I find most satisfactory is based on my early work on dogs in which operation had been performed[3] Following the operation of parathyroidectomy there is a rapid fall in the blood serum calcium, which amounts to about 30 per cent within twenty-four hours The injection of an amount of my original hydrochloric X equivalent to 0 3 Gm of fresh parathyroid tissue, carefully freed from fat and foreign tissue, restores these dogs to normal within six hours In other words, my method of standardization consists of producing an abnormal condition, comparable to the condition we wish to treat in human beings and in restoring this condition to normal by the administration of an active extract

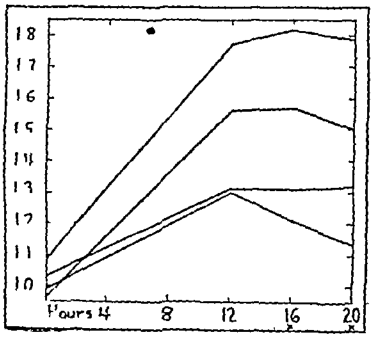

Chart 1—Variability of response of dogs to administration of an extract

In addition to its logical scientific basis, my method of standardization possesses a considerable practical advantage In normal dogs the variability of response is so great that large numbers of animals are necessary to standardize properly any one lot of extract prepared for experimental or clinical use This variability is illustrated in chart 1

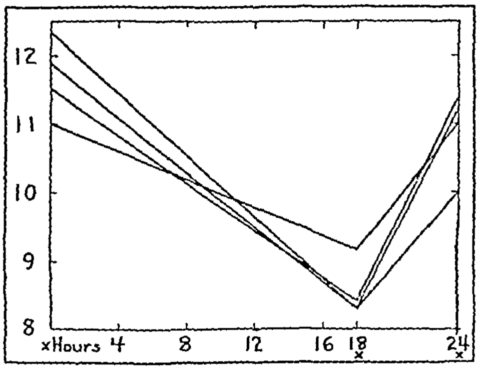

Chart 2—Uniformity of response of dogs in which a true parathyreopriva has been established and in which the calcium content of the blood serum has decreased

Dogs that have been operated on in which a true parathyreopriva is established and in which a definite drop in the calcium content of the blood serum occurs, respond to the treatment with considerable uniformity, as is illustrated in chart 2

Table 1—*Effect of One Hundred and Fifty Units Subcutaneously*

Dog Number	Weight Kg	Serum Calcium (Mg per 100 Cc)			
		Before Operation	20 Hours Later	26 Hours Later	Increase
18	12 7	11 7	8 5	10 5	2 0
20	10 3	10 7	7 7	8 6	0 9
21	13 6	10 5	7 9	9 5	1 6
22	19 1	10 7	7 9	9 1	1 2
24	18 0	10 5	8 2	9 7	1 5
Average					1 4

The product that I have prepared for clinical use is, therefore, standardized on parathyroidectomized dogs (average weight 15 Kg) Twenty-four hours after operation these animals show approximately a 30 per cent drop in the blood serum calcium but must not show severe symptoms of tetany An amount of extract is then administered that will cause an average rise of 3 mg in the calcium level within six hours, thus practically restoring the normal level My clinical unit is defined as one one-hundredth the amount of extract required to produce each 1 mg rise in calcium under the experimental conditions specified

My original hydrochloric X, when prepared from fresh, potent and carefully cleaned gland material, is found to be equal to 60 units per cubic centimeter

In the accompanying tables are shown the uniformity of the results obtained on dogs in which operation was performed The extract used was a purified product obtained from the hydrochloric X by precipitation as a picrate

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[1] Hanson A M Mil Surgeon **52** 434 (April) 1923 **54** 76 (Jan) 1924 Collip J B Am J Physiol **72** 182 1925 J Biol Chem **63** 395 (March) 1925 Hjort A M Robinson S C and Tendick F H Ibid **65** 117 (Aug) 1925

[2] Collip J B, Clark, E P, and Scott J W Biol Chem **63** 439 (March) 1925

[3] Hanson, A M Minnesota Med **8** 283 285 (May) 1925

The results recorded in tables 1 and 2 and in chart 2 were obtained following the first drop in serum calcium after operation, no treatment having been previously given The results recorded in table 3 are based on animals that had received various injections previously The uniformity of results may be contrasted with the variations in results with normal dogs, as recorded in chart 1

In treating parathyroidectomized dogs for the purpose of standardization, it is important, of course to exclude dogs that are in a state of serious tetany In a series of twenty dogs in which operation was performed only one was excluded because of an unusually severe tetany that developed within the twenty-four hour period following the operation—symptoms of a severity that would not develop until thirty-six to forty-eight hours after operation A second animal (a bulldog) was also rejected because of failure to show any appreciable drop in the blood serum calcium, a fact that verifies previous observations on this breed of dogs

The object of parathyroid therapy should be to restore the normal calcium content of the blood serum Large doses of the calcium raising hormone are dangerous[4] and should never be used clinically, except in such cases as marked acidosis and severe tetany, and then its effect should always be carefully checked by calcium estimations Even in such cases, the large initial dose should be followed by smaller doses of from one-tenth to one-fifth that of the first injection every twelve hours It is found that such smaller doses, given every twelve hours for five or six days, will bring about a gradual readjustment, approaching normal in most cases

Table 2—*Effect of Three Hundred Units Subcutaneously*

		Serum Calcium (Mg per 100 Cc)					
Dog Number	Weight Kg	Before Operation	24 Hours After	28 Hours After	30 Hours After	32 Hours After	Maximum Rise
26	10 9	11 3	7 2	9 4	10.3	9 9	3 1
27	20 5	10 6	8 6	10 2	11 3	11 9	3 3
28	11 4	9 5	8 8	9 8	10 3	11 0	2 2
29	12 3	10 3	8 6	10 3	10 8	11 2	2 6
30	14 1	11 2	8 6	10 1	11 0	11 2	2 6
31	12 7	10 4	7 7	11 6	12 1	12 5	4 8
32	9 5	11 8	8 8	11 6	11 5	11 4	2 8
Average							3 1

Table 3—*Effect of Six Hundred Units Subcutaneously*

		Serum Calcium (Mg per 100 Cc)		
Dog Number	Weight Kg	Initial	After 16 Hours	Maximum Rise
17	12 3	7 9	13 7	5 8
18	16 4	7 0	11 9	4 9
20	10 5	6 1	11 9	5 8
22	19 1	5 9	10 3	4 4
24	18 0	7 2	12 6	5 4
Average				5 3

The dosage that I have used in my clinical work is from 30 to 60 units every twelve hours for five or six days Following this, an interval of from seven to fourteen days is allowed to elapse, after which the treatment may be repeated An exception to this is severe tetany following operations for goiter, when it is necessary to continue the injections over a long period of time, preferably keeping the calcium level slightly below normal rather than above normal Used in this way, it is a safe product to place in the hands of the profession for general clinical use and does not require checks on the blood serum calcium in most cases

SUMMARY

1 Relatively small doses of the parathyroid hormone will restore parathyreoprivic dogs to normal

2 Parathyroid extract, for clinical use, should be standardized against a known hypocalcemia

3 The use of a smaller, accurately standardized unit avoids the danger of inducing a marked hypercalcemia

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[4] The Pathology of Overdosage with Parathyroid Hormone editorial J A M A 89 294 (July 23) 1927

THE NATURE OF THE RESPONSE OF THE MUSCLES TO FARADIC STIMULATION *

F A CAJORI, Ph D
AND
RALPH PEMBERTON, M D
With the Assistance of Eleanor Stilz, A B
PHILADELPHIA

Electricity has found a rather wide use in medicine, and various forms of it have been employed therapeutically in the treatment of many diseases There is as yet insufficient knowledge of the physiologic response of the body to the several forms of the electric current to make possible an explanation of the benefit that is alleged to occur in many cases from such treatment

A number of workers have reported that a general stimulation of metabolism, as evidenced by an increased excretion of metabolic end-products, follows several kinds of electrical stimulation The work of Steel[1] may be mentioned in this connection He determined the urinary output of water, total solids, nitrogen, urea, creatinine and sulphur for a three day period, during which his subject received certain electrical treatments, and contrasted the results with the composition of the urine of the same subject for like periods before and after In this work Steel studied different types of electrical treatments, particularly high frequency currents, which in recent years have been held in high favor by electrotherapeutists The procedures employed were the faradic sinusoidal current, which is an interrupted induced current given at a frequency of 45 per minute in one experiment and 90 per minute in another, autocondensation, which is an induced current of very high frequency producing considerable thermal effects but no muscular contraction, the static or Morton wave, which causes rather widespread muscular contraction, and the galvanosinusoidal current (70 milliamperes for thirty minutes), which has a thermic effect as well as causing muscular contraction

Steel found an increased excretion of nitrogen, total solids, urea, sulphur and creatinine on the days when the electric current was used and, with the exception of those currents which had a marked thermal effect, an increased water excretion In general, a marked similarity of response was found to occur in all the electrical procedures employed, indicating a stimulation of metabolism from each of several widely different electrical treatments

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* From the Laboratory of Clinical Chemistry Presbyterian Hospital

* The work here reported is part of a study on chronic arthritis in collaboration with R B Osgood, M D of Boston The expenses were defrayed by contributions from various sources including a number of patients

[1] Steel M J Electrotherap & Radiol 34 243 (May) 1916 M Rec 89 459 (March 11) 1916

Rowe and Hunt[2] also found an increase in nitrogen and sulphur excretion following the use of high frequency currents. They report a slight drop in the blood sugar during this treatment.

We have not seen any reports in which the muscular activity following stimulation with a current of low frequency has been measured in terms of the characteristic chemical changes that accompany muscular contraction. The work here reported was conducted with the view of ascertaining whether slowly interrupted faradic stimulation of muscle, as often used therapeutically to preserve and increase muscle function, would cause sufficient muscular activity and consequent lactic acid production to alter the acid-base balance of the blood. During severe muscular exercise of a few minutes' duration, as Barr, Himwich and Green[3] and Hill, Long and Lupton[4] have shown, there is in the blood a large increase in lactic acid, which returns to normal levels only after from fifty to ninety minutes. This increase in lactic acid is sufficient to cause, temporarily, a pronounced acidosis.

EXPERIMENTAL

The subjects of the five experiments which form the basis of this report were adult men from the outpatient department who had been receiving physical therapeutic treatments, though not necessarily electrical treatments. One was convalescing from a fracture (experiment 1) and one (experiment 5) from a dislocation of the elbow. The subject of experiment 2 had marked muscular weakness, particularly of the shoulders and arms, but no muscular atrophy, the provisional diagnosis was psychoneurosis. The subject of experiment 3, also from the neurologic clinic, had a bilateral bursitis of the shoulder with loss of motor power. Experiment 4 was carried out on a fairly vigorous man, aged 60, with mild diabetes and albuminuria.

In each experiment, samples of the urine and blood were obtained before and again at the conclusion of the electrical treatment. A slowly interrupted faradic current with a rate of about 90 shocks a minute was used. Each shock caused a decided muscular twitch, which was as large as was compatible with therapeutic practice, when one pole was held over the motor point and the other pole at a nearby indifferent point. Sixteen shocks were given at each motor point. The muscles of the legs were first stimulated, then those of the trunk and neck, and lastly the arms, ending with the muscles of the arm from which the blood samples were taken. It took about twenty minutes to cover the body in this way. We are indebted to Mr J J O'Brien of the physical therapy department of the Presbyterian Hospital for giving the electrical treatments.

TABLE 1—*Blood Analysis Before and After Muscular Stimulation with Slowly Interrupted Faradic Current*

Experiment	Duration of Faradic Stimulation Min		Oxygen Content per Cent by Vol	Oxygen Capacity per Cent by Vol	Oxygen Saturation per Cent by Vol	Carbon Dioxide Content per Cent by Vol	p_H	Sugar Mg per 100 Cc	Lactic Acid Mg per 100 Cc
1	20	Before	7.0	17.9	39	53.6		96	16.1
		After	12.6	17.7	71	50.8		99	16.6
2	21	Before	8.3	18.5	45	46.8	7.33	87	16.1
		After	12.2	18.3	67	46.2	7.38	83	17.4
3	22	Before	14.8	21.7	68	46.7	7.47	101	17.9
		After	11.1		51	47.3	7.48	95	17.7
4	25	Before	11.5	15.5	74	47.2	7.25	163	34.4
		After	8.6	16.4	52	49.6	7.34	165	18.0
5	21	Before	13.9	21.5	65	52.0	7.42	109	19.3
		After	12.1		56	49.7	7.43	110	21.2

The blood samples were collected under oil in tubes containing potassium oxalate and sodium fluoride. Each sample was analyzed for its oxygen and carbon dioxide content and oxygen capacity, the methods of Van Slyke and Stadie[5] being used. The plasma p_H was determined by Hawkins'[6] modification of Cullen's colorimetric method. The blood sugar and lactic acid were determined in a tungstic acid filtrate by means of Clausen's[7] sulphuric acid method for lactic acid and the Folin-Wu[8] method for blood sugar. The urine p_H and hourly excretion of water, nitrogen, inorganic phosphorus and lactic acid were determined before and during the electrical stimulation.

TABLE 2—*Urinary Excretion Before and During Muscular Stimulation with a Slowly Interrupted Faradic Current*

Experiment		Volume Cc per Hour	Specific Gravity	p_H	Lactic Acid, Mg per Hour	Total Nitrogen, Mg per Hour	Inorganic Phosphorus, Mg per Hour	Notes
1	Before	16		5.4	3.1	309	45	
	During	30		5.2	4.6	550	44	
2	Before	28	1.026	5.0	3.7	316	36	Drank 2 glasses of water before electrical stimulation
	During	58	1.027	5.2	5.2	431	65	
3	Before	59	1.027	5.6	3.0	427	28	
	During	69	1.025	5.6	2.5	667	58	
4	Before	31	1.022	5.0	4.2	220	10	Both urines showed a heavy cloud of albumin, sugar negative
	During	93	1.020	5.4	21.5	499	40	
5	Before	60	1.019	5.8	9.8	494	15	
	During	43	1.026	5.2	3.4	567	16	

RESULTS

It seems clear from the results of these experiments, the data of which are presented in the accompanying tables, that the muscular activity induced under the conditions of faradic stimulation employed is without effect on the lactic acid content of the blood or the acid-base equilibrium. Lactic acid readily passes from tissues to blood and excessive formation of it, such as occurs during severe exercise or marked anoxemia, causes a large increase in the concentration of lactic acid in the circulating blood. No such results were found in these experiments. The lactic acid concentration of the blood and the urinary excretion of lactic acid were essentially unchanged at the end of twenty minutes of faradic stimulation. In experiment 4, an initial high blood lactic acid content returned to a normal value coincident with a definite increase in the rate of lactic acid excretion. A slight increase in blood p_H also occurred. The changes in this experiment are perhaps referable to the decidedly abnormal condition of the subject (diabetes and albuminuria) and do not lend themselves to ready interpretation. The oxygen content of the venous blood (arm vein) rose decidedly in two cases (experiments 1 and 2). In the other three experiments, however, there was a fall in the oxygen content and in the percentage of oxygen saturation. The blood volume, as far as it is measured by the oxygen capacity, remained constant during the experimental procedure Significant changes in the blood sugar were not observed

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[2] Rowe, A. W., and Hunt, R. S.: J. Bone & Joint Surg. **7**: 161 (Jan.) 1925.

[3] Barr, D. P.; Himwich, H. E., and Green, R. P.: J. Biol. Chem. **55**: 495 (March) 1923.

[4] Hill, A. V.; Long, C. N. H., and Lupton, H.: Proc. Roy. Soc., Lond., Series B **96**, 438, 1924.

[5] Van Slyke, D. D., and Stadie, W. C.: J. Biol. Chem. **49**: 1 (Nov.) 1921.

[6] Hawkins, J. A.: J. Biol. Chem. **57**: 493 (Sept.) 1923.

[7] Clausen, S. W.: J. Biol. Chem. **52**: 263 (May) 1922.

[8] Folin, Otto: Laboratory Manual of Biological Chemistry, ed. 3, New York, D. Appleton & Co., 1922, p. 253.

An increased excretion of water, nitrogen and inorganic phosphorus was observed in most of the experiments during the time that the electrical stimulation was given These observations, in the light of Steel's[1] work are suggestive of increased metabolism as a result of the electrical stimulation of the nature under consideration It should be mentioned, however, that the subjects of these experiments were not under any dietary control, and the influence of the dietary regimen on the composition of the urine during the experimental period remains undetermined

In a previous communication[9] it was shown that whereas the application of external heat tends to produce an alkalosis vigorous massage did not cause any change in the acid-base equilibrium of the blood and did not produce any increase in lactic acid It should be pointed out that the massage administered was as severe as the muscles could well stand, compatible with the avoidance of trauma The muscular contractions which accompany faradic stimulation, however, do not approach the full muscular capacity and were limited by the undesirable subjective effects of the electrical shock It cannot therefore be said that the fullest theoretical degree of vigorous and sustained electrical stimulation would not induce increased production of lactic acid Within the limits of therapeutic practice, however, which constitutes the point of chief interest, this is not forthcoming

SUMMARY

The effect of vigorous, slowly interrupted faradic stimulation of muscles on the composition of the blood and urine has been determined in five experiments The electrical stimulation was administered according to modern therapeutic practice

No change in the lactic acid concentration or the acid-base equilibrium of the blood or urine was observed as a result of the muscular activity produced by the current

An increased urinary excretion of water nitrogen and inorganic phosphorus during the time of electrical stimulation suggests that one effect of this type of electrical treatment is to increase metabolic processes

2120 Sansom Street

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[9] Pemberton Ralph Cajori F A and Crouter Caroline Y The Physiologic Effect of Massage J A M A 83 1761 (Nov 29) 1924

Pathologic Anatomy and Disease—The separation of pathologic anatomy from the study of disease as a whole was good neither for pathologic anatomy nor for medicine Pathologic anatomy or pathology, or whatever we call it, is not one of the medical sciences, or a contributory science to medicine It is a part of medicine itself, unless medicine is to be restricted to the cure of disease The science of medicine is no more applied pathology than pathologic anatomy itself is applied anatomy and histology The study of pathologic anatomy is, or should be, only one of the methods for investigating disease, and the closer it can be interwoven with the other methods the more likely are its results to be of value The field of pathologic anatomy is the study of the effects of disease To really learn about disease, that is, to understand the alterations in function and structure which are exhibited by the abnormal individual, the individual himself must be studied, during life as well as after death and this study must be combined with an attempt to explain the abnormal phenomena in the light of present knowledge and by the aid of all suitable methods This is the science of medicine if such there is, and if there is not such a science there ought to be —Cole, Rufus *Science* 67 50 (Jan 20) 1928

ONE HUNDRED CASES OF APPARENTLY CURED POLLEN HAY-FEVER *

I CHANDLER WALKER, M D

BOSTON

During the past ten years in the treatment of hay-fever I have not only attempted to procure good results for the ensuing season but have also had in mind and hoped for permanent results This paper, therefore, deals only with those patients who have been treated and have probably been under observation for a long enough time to justify the word cured A series of 100 patients is presented and the data are grouped into three tables

In table 1 are presented the records of thirty-nine *patients who were treated until the cutaneous tests with* the pollens, to which they were previously sensitive, were either negative or practically negative and who have been free from symptoms of hay-fever for a period of three or more years since the cessation of treatment In table 2 are presented another group of thirty-nine patients in whom equally satisfactory clinical results were obtained, in no instance, however, did the cutaneous test become negative and in some cases the test was not appreciably modified, although most of the patients did show a decreased sensitivity In table 3 are presented twenty-two patients who have been free from symptoms for two years since treatment was discontinued Seventeen were treated until the cutaneous test with the causative pollen was negative or practically so and the remaining five, although not giving negative reactions, showed a more or less diminished sensitivity

Although in recent years the tendency has been toward shortening the interval between inoculations even to that of giving two treatments a day, the patients presented in this paper were usually treated at weekly intervals, and in only an occasional case was treatment given as often as every five days In most cases the treatment was entirely preseasonal, thus, treatment was begun from thirteen to sixteen weeks previous to the usual onset of hay-fever symptoms In the few instances in which patients presented themselves from one or two weeks too late, one or two inoculations were given after the onset of symptoms, however, this was unusual A detailed description of the method of preseasonal treatment used in this paper, of the method of making the pollen extracts, and of the method of testing the patients has been presented in a former paper[1]

All the tables are so similar that one explanation suffices In the first column, a number represents the name of a patient The second and third columns are headed by the word "age," the first of these two columns giving the age of the patient when the hay-fever began and the second column giving the number of years that the patient had hay-fever before treat*ment, therefore, when these two numbers are added* together the age of the patient when treatment was begun is determined The series of columns headed "years treated and result" represent the various years that the patient was treated and the result from treatment during these years The series of columns headed "years not treated and result" represent the years in which no treatment was given and the condition of the patient during the respective years that he did not have treatment The last two columns are headed by the word "tests", the first of these columns headed by the word "before,' represents the sensitiveness of the patient or to what dilution of the pollen protein the patient reacted before treatment was given and the second column, headed by the word "later,' represents the sensitiveness of the patient or to what degree the patient reacted to the pollen protein the first year after treatment was omitted The initials and numerals in the column headed by the various dates are to be interpreted as follows O K means that there were no hay-fever symptoms, P F, that the patient was practically free from hay-fever—that, as a matter of fact, there may not have been any symptoms of real hay-fever, but as the patient may have sneezed occasionally, perhaps no more than at any time of year, the result was interpreted as P F rather than as perfect By 75 is meant that the patient considered himself benefited to that degree, by 50, that he estimated that he had about half as much hay-fever as he was accustomed to have before treatment, and by N B that no benefit resulted from treatment

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* From the Medical Clinic of the Peter Bent Brigham Hospital All the patients who were treated in the years 1918 and 1919 a total of twenty three were treated in the Outdoor Clinic of the hospital the remaining cases were treated in private practice

[1] Walker I C Frequent Causes and the Treatment of Seasonal Hay Fever Arch Int Med 28 71 118 (July) 1921

To illustrate this interpretation of the tables, patient 1 in table 1 may serve as an example In this patient hay-fever began when he was 8 years old, and as he had had hay-fever five years before he presented himself for treatment, he was therefore 13 years of age when first treated He was first treated in 1919, and as a result he became practically free from hay-fever As the beginning of treatment in 1919 he gave a positive cutaneous test with a dilution of 1 5,000 of the pollen with which he was treated and which was considered to be the causative one In 1920 and 1921 the patient was treated with perfect results By 1922 the cutaneous test had become very questionable with the pollen with which he had been treated, so that no treatment was deemed necessary Therefore during the years 1922 to 1926 inclusive no treatment was given and the patient did not have hay-fever

In order to save space the sex of the patient is not given, but it might be well to state that the sex did not seem to make any difference in the results Furthermore, since for the same reason the type of hay-fever is not indicated it may be stated here that about one fourth of the patients had hay-fever during the period from late in May to the middle of July, and the remaining three fourths of the patients had autumnal hay-fever beginning in August and terminating with a hard frost

In table 1 it may be noted that nineteen patients were free from hay-fever symptoms for a period of three years after treatment was discontinued The pollen test was negative in nine of these, and in six others the pollen gave only a doubtful reaction, the remaining four patients reacted positively to a 1 100 dilution but did not react to a greater dilution Before treatment three of these patients reacted positively to only a 1 1,000 dilution of the pollen extract, six reacted to a 1 5,000 dilution, eight reacted to a 1 10,000 dilution, and the remaining two patients reacted to a 1 20,000 dilution Therefore, there was a marked decrease in the sensitivity of most of the patients in two, from a positive reaction with a 1 20,000 dilution to a doubtful reaction with the whole pollen, in three, from a dilution of 1 10,000 to a doubtful reaction, and in three others to a negative test Of this group, five were treated two years, seven, three years, four, four years, and three six years In other words, it required six years' treatment in three patients to accomplish what four years' treatment did with four patients and what three years' treatment did in seven cases and two years' treatment in five cases

Seven of the patients listed in table 1 have been free from symptoms for a period of four years since treatment was discontinued With these the cutaneous tests showed the following decrease in sensitivity one

Table 1—*Results of Treatment in Group 1*

Patient	Age		Years Treated and Result						Years Not Treated and Result						Tests	
			1918	1919	1920	1921	1922	1923	1926	1925	1924	1923	1922	1921	Before	Later
1	8	5		P F	O K	O K			O K	O K	O K	O K	O K		1 5 000+	Pol ±
2	18	3		P F	O K				O K	O K	O K	O K	O K	O K	1 5 000+	Pol ±
3	8	2			50	75	P F	O K	O K	O K	O K				1 1 000+	Pol 0
4	9	3	P F	O K	O K				O K	O K	O K	O K	O K	O K	1 1 000+	Pol 0
5	35	5		75	P F	O K			O K	O K	O K	P F			1 1 000+	Pol 0
6	14	17	50	O K	O K	P F	P F	O K	O K	O K	O K				1 5 000+	Pol 0
7	40	5			O K	75	P F	O K	O K	O K	O K				1 5 000+	Pol ±
8	39	10				75	P F	O K	O K	O K	O K				1 10 000+	Pol ±
9	20	6	O K	P F	P F	75	O K	O K	O K	O K	O K				1 5 000+	1 100+
10	25	10	O K	O K	O K				O K	O K	O K	O K	O K	O K	1 5 000±	Pol 0
11	30	20				O K	P F	O K	O K	O K	O K				1 10 000±	Pol 0
12	26	8	O K	O K	P F	P F	P F	O K	O K	O K	O K				1 10 000±	1 100+
13	15	3				O K	O K		O K	O K	O K	O K			1 5 000+	Pol 0
14	39	10				75	P F	O K	O K	P F	O K				1 10 000+	Pol +
15	20	10			75	P F	O K		O K	O K	O K	O K			1 20 000+	1 100+
16	29	10					P F	O K	O K	O K	O K				1 1 000+	Pol 0
17	22	3					P F	O K	O K	O K	O K				1 1 000+	Pol 0
18	20	10				O K	O K		O K	O K	O K	O K			1 5 000+	Pol ±
19	25	10			75	P F	O K	O K	O K	O K	O K				1 20 000+	Pol ±
20	50	10	P F	O K	O K				O K	O K	O K	O K	O K	O K	1 5 000+	1 100+
21	11	3					O K	O K	O K	O K	O K				1 10 000+	1 100+
22	9	3					P F	O K	O K	O K	O K				1 5 000+	1 100+
23	25	7			P F	O K	O K	O K	O K	O K	O K				1 5 000+	Pol 0
24	52	5				P F	O K	O K	O K	O K	O K				1 5 000+	Pol 0
25	23	10					P F	O K	O K	O K	O K				1 10 000+	Pol 0
26	31	10				P F	O K	O K	O K	O K	O K				1 10 000+	Pol 0
27	5	42		75	75	O K	O K		O K	O K	O K	O K			1 000+	Pol ±
28	5	4			O K				O K	O K	O K	O K	O K	O K	1 5 000+	Pol 0
29	27	5					O K		O K	O K	O K	O K			1 10 000+	Pol ±
30	23	5					O K		O K	O K	O K	O K			1 10 000±	Pol ±
31	26	6			O K				O K	O K	O K	O K	O K	O K	1 5 000+	Pol 0
32	18	5			O K				O K	O K	O K	O K	O K	O K	1 10 000+	Pol 0
33	25	7			O K				O K	O K	O K	O K	O K	O K	1 1 000+	Pol ±
34	6	7					P F		O K	O K	P F	P F			1 20 000±	Pol ±
35	8	2					P F		P F	P F	P F	P F			1 5 000+	Pol 0
36	12	8					P F		P F	P F	P F	P F			1 5 000+	Pol ±
37	26	8			O K				O K	O K	O K	O K	O K	O K	1 1 000+	Pol 0
38	37	10				75	P F	O K	O K	O K	O K				1 10 000+	Pol ±
39	20	15				75	O K	O K	O K	O K	O K				1 20 000+	Pol ±

far as it is measured by the oxygen capacity, remained constant during the experimental procedure Significant changes in the blood sugar were not observed

An increased excretion of water, nitrogen and inorganic phosphorus was observed in most of the experiments during the time that the electrical stimulation was given These observations, in the light of Steel's[1] work are suggestive of increased metabolism as a result of the electrical stimulation of the nature under consideration It should be mentioned, however, that the subjects of these experiments were not under any dietary control, and the influence of the dietary regimen on the composition of the urine during the experimental period remains undetermined

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SUMMARY

The effect of vigorous, slowly interrupted faradic stimulation of muscles on the composition of the blood and urine has been determined in five experiments The electrical stimulation was administered according to modern therapeutic practice

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[9] Pemberton Ralph Cajori F A and Crouter Caroline Y The Physiologic Effect of Massage J A M A 83 1761 (Nov 29) 1924

Pathologic Anatomy and Disease—The separation of pathologic anatomy from the study of disease as a whole was good neither for pathologic anatomy nor for medicine Pathologic anatomy or pathology, or whatever we call it, is not one of the medical sciences, or a contributory science to medicine It is a part of medicine itself, unless medicine is to be restricted to the cure of disease The science of medicine is no more applied pathology than pathologic anatomy itself is applied anatomy and histology The study of pathologic anatomy is, or should be, only one of the methods for investigating disease, and the closer it can be interwoven with the other methods the more likely are its results to be of value The field of pathologic anatomy is the study of the effects of disease To really learn about disease, that is to understand the alterations in function and structure which are exhibited by the abnormal individual, the individual himself must be studied, during life as well as after death, and this study must be combined with an attempt to explain the abnormal phenomena in the light of present knowledge and by the aid of all suitable methods This is the science of medicine if such there is and if there is not such a science there ought to be —Cole, Rufus *Science* 67 50 (Jan 20) 1928

ONE HUNDRED CASES OF APPARENTLY CURED POLLEN HAY-FEVER *

I CHANDLER WALKER, M D

BOSTON

During the past ten years in the treatment of hay-fever I have not only attempted to procure good results for the ensuing season but have also had in mind and hoped for permanent results This paper, therefore, deals only with those patients who have been treated and have probably been under observation for a long enough time to justify the word cured A series of 100 patients is presented and the data are grouped into three tables

In table 1 are presented the records of thirty-nine patients who were treated until the cutaneous tests with the pollens, to which they were previously sensitive, were either negative or practically negative, and who have been free from symptoms of hay-fever for a period of three or more years since the cessation of treatment In table 2 are presented another group of thirty-nine patients in whom equally satisfactory clinical results were obtained, in no instance, however, did the cutaneous test become negative and in some cases the test was not appreciably modified, although most of the patients did show a decreased sensitivity In table 3 are presented twenty-two patients who have been free from symptoms for two years since treatment was discontinued Seventeen were treated until the cutaneous test with the causative pollen was negative or practically so and the remaining five, although not giving negative reactions, showed a more or less diminished sensitivity

Although in recent years the tendency has been toward shortening the interval between inoculations even to that of giving two treatments a day, the patients presented in this paper were usually treated at weekly intervals, and in only an occasional case was treatment given as often as every five days In most cases the treatment was entirely preseasonal, thus, treatment was begun from thirteen to sixteen weeks previous to the usual onset of hay-fever symptoms In the few instances in which patients presented themselves from one or two weeks too late, one or two inoculations were given after the onset of symptoms, however, this was unusual A detailed description of the method of preseasonal treatment used in this paper, of the method of making the pollen extracts, and of the method of testing the patients has been presented in a former paper[1]

All the tables are so similar that one explanation suffices In the first column, a number represents the name of a patient The second and third columns are headed by the word "age," the first of these two columns giving the age of the patient when the hay-fever began and the second column giving the number of years that the patient had hay-fever before treatment, therefore, when these two numbers are added together the age of the patient when treatment was begun is determined The series of columns headed "years treated and result" represent the various years that the patient was treated and the result from treatment during these years The series of columns headed "years not treated and result" represent the years in

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* From the Medical Clinic of the Peter Bent Brigham Hospital All the patients who were treated in the years 1918 and 1919 a total of twenty three were treated in the Outdoor Clinic of the hospital the remaining cases were treated in private practice

[1] Walker I C Frequent Causes and the Treatment of Seasonal Hay Fever Arch Int Med 28 71 118 (July) 1921

repeatedly occurred, and it is the practice in many hospitals and clinics to color their cocaine solutions so as to distinguish them easily. In cases of idiosyncrasy, however, mild and even dangerous intoxication may result from the use of minute amounts. Since the use of cocaine as a local anesthetic on mucous membrane has not as yet been successfully equaled by any of the newer drugs, any means that may be employed to make it safer are to be welcomed.

The pharmacodynamics of cocaine have been fairly well established. The drug, aside from its local anesthetic properties is known as a cerebral stimulant. In deaths following cocaine poisoning there is always a preceding hyperpnea associated with clonic convulsions. The hyperpnea soon becomes irregular and the respirations cease after a period of respiratory flutter, which is evidently due to an exhaustion of the respiratory center consequent to the overstimulation. The heart continues to beat after the breathing has ceased. The clonic convulsions and the hyperpnea are due to an overstimulation of the cerebral cortex and respiratory center.

Morita[1] has shown that the typical respiratory failure with the preceding flutter type of breathing does not occur in the decerebrate rabbit, and Feinberg[2] has observed a marked increase in the tolerance to cocaine in decerebrate laboratory animals. Richet[3] observes that the sensitivity of different animals to cocaine is in direct proportion to the complexity or state of development of the brain and apparently man is most sensitive. In view of all this, it is not unnatural to suggest the use of some pharmacodynamic antagonist in the treatment of cocaine intoxication, namely, a cerebral depressant. Ether, chloral hydrate, and morphine have been used with but little success. Hofvendahl[4] and Tatum, Atkinson and Collins[5] have reported on the successful use of the barbituric hypnotics in the treatment of cocaine poisoning in experimental animals, especially in the monkey (*Macacus rhesus*). They used a solution of soluble barbital. They found that the minimal lethal dose of a subcutaneous injection of cocaine could be raised several fold by a previous intravenous injection of the soluble barbital. They showed further that animals in cocaine convulsions recovered if given a proper dose of the soluble barbital, provided the convulsions were not allowed to continue too long. The intravenous injection of the hypnotic caused an immediate cessation of the convulsions, and it was apparent that the likelihood of recovery was inversely proportional to the time the convulsions were allowed to continue. Hofvendahl recommends the use of 20 cc. of a 5 per cent solution of soluble barbital as an intramuscular injection immediately on the appearance of severe symptoms of poisoning, but warns that when the stage of convulsions has been reached, intravenous administration alone may be absolutely necessary. Tatum and his co-workers advise the use of 100 mg. of soluble barbital dissolved in 5 cc. of a saturated solution of paraldehyde per kilogram of body weight. As such a solution is stable, they advocate the preparation of a stock solution to be used in an emergency.

In light of the foregoing facts, we were led to use phenobarbital in a case of cocaine sensitiveness. A woman in whom symptoms of intoxication appeared as soon as cocaine was applied to her nose failed to show any evidence of an idiosyncrasy to the drug if 3 grains (0.2 Gm.) of phenobarbital was administered thirty minutes before the application of the alkaloid. This and a few similar cases in which the use of the drug was apparently successful led to the advocation, in a preliminary report,[6] of the use of phenobarbital as a prophylactic in persons known to be sensitive to the drug. It was also suggested that phenobarbital might be used to supplant morphine as a preoperative sedative when it would also act in its prophylactic capacity. Leshure,[7] some time later, reported the successful use of barbital in a similar manner.

A careful review of results experienced with the drug used thirty minutes before the administration of cocaine more than justifies the indication for its employment in that manner. During the period between April 1, 1925, and April 1, 1926, there were performed at the clinic 416 operations under cocaine anesthesia. Of this number, seventy-eight, or about 19 per cent, showed some signs of intoxication. It is true that in the majority of instances the symptoms were of a mild nature and consisted mainly of a marked restlessness, tremor, cardiac palpitation, pallor, sweat and a decided tendency toward loquacity. However, a few cases evidenced symptoms of a profound intoxication, although none ever progressed to the stage of convulsions. During the last three months of this period there was an opportunity of observing the response of sixteen patients with cocaine intoxication to the administration of phenobarbital. In all these cases, the symptoms were relieved a short time after the ingestion of the hypnotic. In similar cases a very much longer time was usually required for recovery. These observations definitely established the value of the drug and led to the publication of the preliminary report.

Since that time there has been substituted 3 grains (0.2 Gm.) of phenobarbital by mouth thirty minutes before operation for the preoperative injection of morphine. We were impressed by its efficacy as a preoperative sedative and have not had any occasion to use morphine since. That it served as a prophylactic in the prevention of cocaine reactions may be gathered from a comparison of the number of intoxications that were observed during the preceding year in which phenobarbital was not used and during the following year when it was used. In the past year, in which the hypnotic was given as described, 391 operations were performed in the clinic under local cocaine anesthesia, and in this number there were only two reactions. In one case in which the symptoms were not typical, a diagnosis of hysteria was made because of the presence of nasal, corneal and pharyngeal anesthesia. The other occurred in a patient in whom the administration of the hypnotic had been delayed until just before the application of the cocaine, allowing no time for its absorption. The drug when given by mouth must be given sufficient time to be absorbed before cocaine is used. In this period, then from April 1, 1926, to April 1, 1927, only one case of true cocaine intoxication occurred and that developed because of the faulty administration of the drug. When this incidence is compared to the 19 per cent that were observed the year before, one may readily understand our faith in the drug Since the time that we began using phenobarbital as a prophylactic, we have not had any occasion to use the drug in the management of an intoxication It has been reported to us[8] that the hypnotic had been successfully used in a case of serious collapse following the injection of 10 per cent cocaine solution by mistake under the impression that it was procaine hydrochloride The patient rallied after a hypodermic injection of 3 grains (0 2 Gm) of phenobarbital Roth[9] and Lewy[10] have been so pleased with the drug that they have also discontinued the use of morphine as a preoperative measure They also noted a complete absence of reactions following the use of the drug Roth had an opportunity of using the drug in a case of thyrotoxicosis in which there had been a marked reaction to cocaine at a previous operation under local anesthesia At a subsequent operation, no untoward symptoms were manifested, as Roth had given the patient the phenobarbital before using the cocaine

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[1] Morita Arch f exper Path u Pharmakol **78** 208 1915

[2] Feinberg Berl klin Wchnschr **24** 166 1887

[3] Richet Arch internat de pharmacol **4** 299 1898

[4] Hofvendahl A Monatschr f Ohrenh **55** 887 1921 Ztschr f Hals Nasen u Ohrenh **1** 233 1922 Acta oto laryng **4** 238 1922

[5] Tatum A L Atkinson A J and Collins K H Acute Cocaine Poisoning J A M A **84** 1177 (April 18) 1925 J Pharmacol & Exper Therap **26** 325 (Dec) 1925 Tatum A L and Collins, K H Acute Cocaine Poisoning and Its Treatment in Monkey (Macacus Rhesus) Arch Int Med **38** 405 (Sept) 1926

[6] Guttman M R Arch Otolaryng **4** 304 (Oct) 1926

[7] Leshure John Barbital as a Preventive of Cocaine Toxicosis J A M A **88** 168 (Jan 15) 1927

In view of these observations, the conclusion has been reached that phenobarbital is the best remedial agent in the treatment of cocaine poisoning in the therapeutic armamentarium, and that its use has an exact pharmacodynamic basis Furthermore, its use in a prophylactic capacity is rational and has apparently been proved clinically to be effective

DOSAGE

In regard to the dosage and manner of administration of phenobarbital, the following is suggested

As a prophylactic, 3 grains (0 2 Gm) should be given thirty minutes before operation so as to assure plenty of time for absorption

In cases of mild intoxications, 3 grains (0 2 Gm) of soluble barbital dissolved in sterile saline solution may be given hypodermically, or better, 5 cc per kilogram of a saturated solution of paraldehyde in saline solution containing 100 mg of soluble barbital The latter is best made in a stock solution and kept sterile for emergency use

In severe intoxications, 5 cc of the paraldehyde soluble barbital mixture may be given intravenously

As a preoperative sedative, 3 grains (0 2 Gm) should be given by mouth thirty minutes before operation

CONCLUSIONS

1 Phenobarbital is a very valuable drug in the treatment of acute cocaine intoxications

2 Its use is rational and is based on an exact pharmacodynamic study

3 Clinically, it has apparently proved its worth as a preoperative sedative, as a prophylactic in the prevention of cocaine intoxications in those exhibiting an idiosyncrasy to the drug, and also in the treatment of acute cocaine intoxications

4 In a comparison of a series of cases in which phenobarbital was used before operation and a series in which it had not been used, it was apparently shown that its employment could prevent the occurrence of cocaine intoxication, and that it was a good preoperative sedative

5 A stable solution of soluble barbital in physiologic sodium chloride solution saturated with paraldehyde should be available whenever one is confronted by a case of severe cocaine intoxication

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[8] Guttman J R Personal communication to the author
[9] Roth Personal communication to the author
[10] Lewy Personal communication to the author

HYPERPROTEINEMIA ASSOCIATED WITH MULTIPLE MYELOMAS

REPORT OF AN UNUSUAL CASE *

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The literature contains very few references to hyperproteinemia In an extensive series of studies on the concentration of plasma proteins in disease, the highest figure found by Rowe[1] was 10 4 per cent in an undiagnosed case of enlarged inguinal glands Incidentally, the only case of myeloma (of the spinal cord) studied by Rowe showed a normal concentration of plasma proteins, 6 8 per cent, and a normal albumin globulin ratio of 70 30 Higher protein figures are reported by Loeper, Forestier and Tonnet[2] in cancer, especially in cases of large tumors of the kidneys, in one such case 11 per cent of serum proteins were found In Wu's[3] study of the plasma proteins in kala-azar, the highest figure reported is 10 5 per cent, with an albumin globulin ratio of 32 68 In this case, as in the other cases of kala-azar, the globulin is greatly increased and reaches a concentration of 7 per cent Other reported instances of hyperproteinemia deal entirely with animal experiments Thus, Reymann[4] found an increase of total proteins, fibrinogen and pseudoglobulin in the course of diphtheria immunization in horses, stating that similar changes occurred on repeated injections of culture broth alone Berger found progressive increases in the fibrinogen, globulin and albumin concentrations of the plasma of rabbits subjected to repeated injections of foreign proteins In a hitherto unpublished large series of analyses of plasma proteins in a great variety of pathologic conditions encountered in this hospital during the past three years, figures for total plasma proteins exceeding 7 5 per cent were extremely rare, and the highest figure found previously has been in a case of malignant tumor of the kidney, amounting to 9 4 per cent, of which 7 7 per cent was globulin (albumin globulin ratio of 18 82)

The concentration of the plasma proteins in cases of multiple myelomas has not received any especial attention in the past Rowe's series[1] contains the figures for one case of myelomas of the spinal cord which, as was stated, are quite normal Jacobson,[6] who has recently described an interesting case of multiple myelomas with chronic nephritis, was able to demonstrate a great retention of a protein in the plasma analogous in its properties to those of the Bence-Jones protein found in the urine of this patient Employing a method for the quantitative estimation of this protein which could yield only approximate figures, Jacobson reports that he found 7 8 per cent of this protein in the serum by coagulation at 56 C washing and drying The amount of the total protein was not determined, but

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* From the Chemical Division of the Medical Clinic of the Johns Hopkins Hospital and University

[1] Rowe A H The Albumin and Globulin Content of Human Blood Serum Arch Int Med **18** 455 (Oct) 1916 Refractrometric Studies of Serum Proteins in Nephritis Cardiac Decompensation Diabetes Anemia and Other Chronic Diseases ibid **19** 354 (March) 1917

[2] Loeper F , Forestier J and Tonnet J Presse med **29** 333 (April 27) 1921

[3] Wu Hsien J Biol Chem **51** 33 (March) 1922 Sia R H P and Wu Hsien China M J **35** 527 (Nov) 1921

[4] Reymann G C Ztschr f Immunitätsforsch u exper Therap **39** 15 1924 Compt rend Soc de biol **89** 614 1923

[5] Berger W Ztschr f d ges exper Med **28** 1 1922

[6] Jacobson V C J Urol **1** 167 (April) 1917

it must undoubtedly have been greatly in excess of the normal concentration

REPORT OF CASE

J W E a white man aged 40 a farmer from North Carolina admitted to the medical service of the Johns Hopkins Hospital Oct 21, 1926 complaining of 'kidney trouble' gave an unessential family history and a past history of the usual childhood diseases without scarlet fever or diphtheria With the exception of a possible history of typhoid at 8 and of summer diarrhea at 14 and 15 he had always enjoyed good health up to the onset of the present illness

Ten years before admission the patient strained his back while lifting a heavy weight and five years later there was an acute spontaneous back pain the full effects of which had never entirely subsided Two years before admission he was operated on for hemorrhoids and three weeks later was seized with an attack of apparently acute nephritis with hematuria headache fever and a pounding pulse The subsidence of the attack left him with the chronic symptoms of headache, some edema a pounding pulse and nocturia In the winter of 1925 without apparent cause the patient fractured a rib This was followed by dull aching pains between the shoulders radiating down the back The pains increased in severity confining the patient to bed Skeletal changes then appeared, deforming the back the pelvis and the upper part of the legs and knees The patient had noticed a decrease of 3 or 4 inches in his stature and a loss of 20 pounds (9 Kg) There was no change in the size of the head There had been increasing wheezing and cough in the past two years

The patient appeared pale and emaciated with evident weakness and labored respirations He stood with his feet wide apart showing dorsal kyphosis absent lumbar kyphosis sagged knees and winged scapulae held backward to balance the sagging abdomen The arms and legs were of normal length and there was no widening of the pelvis

The chest was filled with coarse rales, and the breath sounds were wheezing The blood pressure was 175 systolic and 100 diastolic the pulse was 90 and there was a systolic murmur audible at the apex of the heart The liver and spleen were palpable There was a general enlargement of the lymph nodes The blood picture was that of a secondary anemia with hemoglobin 40 per cent (Sahli) red blood corpuscles, 1 800 000 and white blood corpuscles, 12,000 The urine showed albumin + + + + red blood cells, white blood cells and casts Bence Jones protein was repeatedly demonstrated and a culture taken from the urine showed a heavy growth of *Staphylococcus albus* and beta hemolytic streptococci The roentgen-ray studies showed multiple involvement of the skull, ribs spine clavicles pelvis upper extremities and femurs with rarefaction and numerous punched out areas A piece of tissue removed at biopsy from the greater trochanter of the femur, was diagnosed multiple myeloma of the plasma cell type

During his stay in the hospital the patient's temperature ranged from 99 to 100 4 F and the pulse from 109 to 130 The respiratory difficulty disappeared under treatment with potassium iodide The blood pressure fell from 170/102 to 125/90 the white blood count, from 12 000 ot 8 000 The albumin and blood in the urine decreased but did not disappear

The patient was discharged November 17, after biopsy had determined the fundamental condition, symptomatically improved, but with the underlying disease process unaltered

COMMENT

The presence of Bence-Jones protein in the urine of this patient was not easily established because of the difficulty of separating it from a large amount of the usual serum proteins, chiefly albumin always present The only method of separation which could be used was filtering the acidified boiling urine In using this procedure, it is more than probable that a considerable amount of the Bence-Jones protein remains occluded by the bulk of the coagulated serum protein of the urine and does not redissolve on boiling Judging, however, from the very faint cloudiness which appeared in the acidified urine on heating it from 40 to 60 C, the concentration of the protein in the urine was never great during the period of this study

Because of the obvious skeletal changes in the patient, a sample of blood was secured for a serum calcium determination before the final diagnosis of his condition was made It was then found that it was practically impossible to obtain any serum from the clotted blood, for the clot failed to retract, even on prolonged and repeated centrifugalization Serum had to be obtained by expressing it from the clot This observation led to the surmise that an excessive amount of fibrinogen was present in the blood, and to the analyses of fibrinogen and of the other plasma proteins in a sample of oxalated blood The first analysis presented such abnormally high figures that it was repeated twice subsequently with substantially the same results, as will be seen from the accompanying table

The analytic technic used was as follows The total nitrogen was determined by the usual Kjeldhal method on 1 cc samples, the total protein nitrogen was obtained by subtracting the nonprotein nitrogen determined by the micromethod of Folin and Wu from the total nitrogen and the total protein by multiplying by the factor 6 25 The fibrinogen and the total globulins were determined by Howe's[7] method of salting out the globulins with a second-molar solution of phosphates and using a macro-Kjeldhal determination of the nitrogen in the filtrates In the case of the fibrinogen, both the nitrogen of the clot obtained on the addition of calcium chloride and of the filtrate were determined in order to get further checks In the calculation of the albumin globulin ratio figures as given in the table, the fibrinogen was included with the globulins, as is customary for plasma proteins

*Plasma Proteins in Oxalated Blood**

	Oct 30 1926	Nov 11 1926	Nov 16 1926		
Total solids	16 15	16 92	17 10		
Refractive index	1.3610	1 3629	1 3583		
Total protein	12 32	13 40	13 84		
Albumin	1 42	1 67	4 06		
Globulin	10 11	11 04	9 09	Euglobulin	6 49
				Pseudoglobulin I	0 66
				Pseudoglobulin II	1 40
Fibrinogen	0 70	0 69	0 69		
Albumin globulin ratio	12 to 88	14 to 86	29 to 71		
Sodium chloride	0 610	0 643	0 668		
Total fatty acids	0 15				
Cholesterol	0 130				
Calcium	10 8 mg				
Inorganic phosphorus	4 8 mg				
Osmotic pressure of protein			45	cm of water	
Surface tension of serum			62	dynes per centimeter	
Surface tension after two hour			52 5	dynes per centimeter	

* Figures are in grams per hundred cubic centimeters of plasma

The striking feature of the data presented in the table is, of course, the very great increase in the plasma proteins from 12 3 to 13 9 per cent, which is twice as great as the normal concentration of the plasma proteins It is noteworthy that the globulins constitute from 71 to 89 per cent of the total protein varying from 9 1 to 11 Gm per hundred cubic centimeters of plasma The concentration of the globulins was so great that on the addition of a few drops of plasma to 5 cc of distilled water flocculation occurred within a short time, exactly in the same manner as described by Wu[3] for kala-azar plasmas This precipitation of a water insoluble globulin suggested the presence of large amounts of euglobulin This suggestion was verified analytically by the determination of the three globulin fractions in the plasma obtained on November

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[7] Howe P E J Biol Chem 57 235 (Aug) 1923

ber 16, in which 7 Gm of euglobulin per hundred cubic centimeters was found It is very likely that in kala-azar similarly large amounts of euglobulin could be demonstrated by such fractionation Here, also as in Wu's series of kala-azar cases, along with the increase in the plasma globulins, the concentration of the albumins was greatly decreased, at least in the first two samples of blood, to 1 4 and 1 7 Gm per hundred cubic centimeters, respectively The rise of the albumin fraction in the third blood sample of November 16, to 4 06 Gm is a noteworthy but unexplained observation Reymann[4] and Berger[5] also observed that following increases of the globulin fractions a rise in the albumin fraction occurred in the hyperproteinemias studied by them The fibrinogen in this case was found to be greatly elevated, from 0 69 to 0 79 per cent as had been surmised at the outset from the failure of the clotted blood to retract on standing and centrifugalization Repeated attempts were made to isolate Bence-Jones protein by heating the diluted plasma at 55 or 60 C, following Jacobson's technic[6] While an abundant precipitate was frequently obtained it failed to redissolve on further heating to boiling When however, this precipitate was dissolved in a dilute solution of sodium hydroxide, and precipitated by the addition of concentrated nitric acid, a small portion of it went into solution on boiling and a definite turbidity reappeared on cooling Normal plasmas used in control experiments failed to respond to this test This leads us to believe that there was present in the plasma as well as in the urine a small amount of Bence-Jones protein Jacobson reported finding as much as 8 per cent of Bence-Jones protein in the serum of his patient already referred to, by means of drying and weighing the precipitate obtained from undiluted serum heated at 56 C There are good reasons for believing that the relatively unstable euglobulin when present in large concentration will be easily coagulated by heating even at as low a temperature as 56 C Hence it is possible that at least a considerable portion of the protein fraction isolated by Jacobson consisted of euglobulin, carrying a significant amount of Bence-Jones protein with it

Several other constituents and physicochemical factors were determined The serum calcium, in spite of definite evidence of bone disease, was found to be normal, 10 8 mg per hundred cubic centimeters The total neutral fat was found to be at a low normal level of 0 155 per cent, as was the total cholesterol of 0 130 per cent The surface tension measured for us by Dr Elizabeth Nicholls of this laboratory by means of the Du Nouy tensiometer showed an initial figure of 62 5 dynes per centimeter, falling to 52 5 dynes after standing two hours The initial value is considerably above the normal range, but the final value is within the normal range It is particularly interesting to note that the osmotic (oncotic) pressure of a sample of plasma determined by means of a collodion thimble osmometer equilibrated against Ringer solution[8] showed a practically normal pressure of 45 cm of water as due to the proteins This can be easily explained on the basis of Sørensen's (unpublished) data giving a much lower osmotic pressure to the globulins than to the albumins On the basis of Govaerts'[9] empirically determined figures, the osmotic pressure of this particular sample of plasma consisting of 1 7 per cent of albumin and 11 7 per cent of globulin was calculated to amount to even less than the observed value, namely 37 cm of water

The only explanation of this unusual accumulation of protein in the plasma which occurs to us and which we may venture to suggest is the following one

The consensus of investigators who studied the nature of the Bence-Jones protein[10] is to the effect that this substance is chemically and immunologically quite distinct from the serum and the tissue proteins It is possible therefore, to conceive of it as a foreign protein in relation to the rest of the body That the parenteral introduction of foreign protein in animals as in immunization experiments also in the production of diphtheria antitoxin in horses, produces alterations in the blood proteins is well known[11] These changes usually consist of increases in the fibrinogen and globulin fractions a decrease in the albumin, and an increase in the total proteins The hyperproteinemias which have been found associated with kala-azar malignant tumors[2] and in the case described may be interpreted as a systemic response to a protracted intoxication with a foreign protein

SUMMARY

In an unusual case of hyperproteinemia associated with multiple myelomas the great increase of the plasma protein was found to be almost entirely in the euglobulin and partly fibrinogen fractions It is possible that this phenomenon may be explained on the basis of a systemic reaction to a foreign protein

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A CASE OF LEAD POISONING RESULTING FROM THE USE OF SNUFF

LEAD STUDIES, XVI *

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AND
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Chronic lead poisoning is a relatively common disease Usually the source of lead can be traced to one of the many industrial lead hazards or to water, alcoholic beverages, or the accidental ingestion of lead About a year ago in The Journal[1] there appeared the question, How does snuff become impregnated with lead? About this time a patient was admitted to the surgical ward of the Massachusetts General Hospital with a tentative diagnosis of intestinal obstruction, which further study demonstrated to be due to lead colic The history of the case was as follows

REPORT OF CASE

A S a widower aged 59 a Swedish seaman, complained chiefly of vomiting and constipation He had enjoyed good health until one year before his entrance to the hospital At this time he suffered from vomiting constipation and severe cramplike pain confined to the lower half of the abdomen There were no other associated symptoms This attack lasted three days complete relief was obtained from thorough purgation He had had five similar attacks during the year each time suffering from the same symptoms, and he always obtained complete relief by catharsis Two weeks prior to entry he was again troubled with vomiting obstinate constipation and severe lower abdominal cramplike pain He again did not complain of any associated symptoms He had not received any relief from catharsis Except for pneumonia twenty-one years before he had always been in excellent health He stated that he had never had any venereal disease When questioned in regard to his habits he said that he had consumed from 1 to 2 ounces of moist snuff tobacco daily for at least twenty-five years He usually snuffed the tobacco into his nose but he also admitted chewing it from time to time

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[8] We are indebted for this measurement to Dr A Grollman of the department of physiology

[9] Govaerts I Bull de l Acad med de Belgique 1924 number 3 Compt rend Soc de biol **93** 441 (July 17) 1925

[10] Massini H Deutsches Arch f klin Med **104** 109 1911 Hektoen Ludvig Specific Precipitin for Bence Jones Reaction J A M A **76** 929 (April 2) 1921 Bayne Jones S and Wilson D W Bull Johns Hopkins Hosp **33** 57 (Feb) 1922 **33** 119 (April) 1922

[11] Reymann (footnote 4) Berger (footnote 5) Gibson R B and Banzhaf E J J Exper Med **12** 411 1910

* From the Medical Service Massachusetts General Hospital

[1] Composition of and Lead Poisoning from Snuff Queries and Minor Notes J A M A **87** 1762 (Nov 20) 1926

The patient was well developed, well nourished and slightly anemic His teeth were tobacco stained His gums disclosed marked pyorrhea and a heavy lead line most marked on the lingual side The heart and lungs were normal The blood pressure was 160 systolic and 80 diastolic He showed moderate arteriosclerosis The abdomen was soft but slightly tender in both lower quadrants The reflexes were normal and equal

Laboratory analyses showed red blood cells, 3 400,000, hemoglobin 60 per cent white count 9,000 and reticulated cells 1 per cent The differential count was normal except for one basophilic stippled cell in every two to three oil immersion fields Serum dilution of the blood was 1 to 5 Wassermann tests on both the blood and the spinal fluid were negative Gastric analysis before the test meal showed no free hydrochloric acid and a total acidity of 13 5, one hour after the test meal, no free hydrochloric acid and a total acidity of 30 Five stool examinations were negative macroscopically and chemically for blood Both the stool and the urine contained large amounts of lead The following roentgen ray examinations were reported negative barium enema, gastro-intestinal series Graham test, and flat kidney plates

Under large doses of atropine and brisk catharsis with magnesium sulphate the patient became symptom free at the end of sixty hours He was discharged from the hospital on a high calcium diet feeling well Close questioning did not elicit any possibility of lead exposure in his occupation He was fairly certain he had never used water from lead pipe This led us to suspect the snuff as the possible cause of the plumbism The two brands of moist snuff tobacco that he was accustomed to using were then examined for lead One sample was found to contain 0 9 mg per ounce and the other 0 8 mg per ounce He also informed us that years previously he had used snuff which was wrapped in heavy tin foil

COMMENT

Moist snuff is made from tobacco leaves and stalks which are placed in a wooden bin and to which water and salt are added This mixture is allowed to ferment for a period of several weeks, and the leaves and stalks are then ground in a fine mill Snuff can be perfumed with certain oils, such as cinnamon oil or oil of cloves This process does not introduce any lead into the snuff unless the tobacco leaves have been sprayed with a germicide containing one of the lead compounds

Red mercuric oxide and lead chromate were formerly used to adulterate snuff, thereby improving its color and sale value Model's paper[2] in 1784 was the earliest reference found to lead poisoning resulting from the continued use of snuff containing lead In 1849, Hassal[3] examined forty-three kinds of snuff, and found that nine brands contained lead chromate in amounts varying from 1 to 4 5 per cent Three samples contained the oxide of lead, as much as 3 per cent in one case In 1856, Meyers[4] reported five cases which, he felt certain, had resulted from the continued use of adulterated snuff Previously, snuff was often kept in vessels or wrappers of lead, or in the alloy of lead called "patent tin foil" Sonnenkalb[5] considered that snuff frequently acquired an accidental impregnation of lead by reason of the coverings of lead in which it was packed In 1859 he reported nineteen cases which he believed were due to snuff, the lead content in all probability coming from the lead wrapper In an ordinance of May, 1857, the Prussian police force warned the public of the possible danger of using snuff wrapped in lead wrappers They also stated that several cases of lead poisoning had resulted from the use of such snuff The wrappers in such cases often showed rather extensive erosion Up to 1883 there were a total of twenty-three references to the subject of plumbism with snuff as the most probable source of lead Most of these reports are found in the German literature Mayer[6] Chambers,[7] Reese,[8] Creegan,[9] Weaver[10] and Garrod[11] all reported one case each resulting from the use either of adulterated snuff or of snuff accidentally impregnated from the lead in the wrappers Stadler[12] reports a case of fatal lead poisoning resulting from lead-impregnated snuff the lead being derived from the metal wrapper The metal wrapper in this case contained 87 per cent lead, and the snuff, 1 7 per cent lead Except for the note already mentioned,[1] the last reference in English was in 1890 At this time Ormsby[13] reported a case of aphonia due to lead poisoning, the source of lead being snuff In all, thirty references were found in which snuff was mentioned as the causative agent in cases of lead poisoning The snuff examined in our case came in paraffin-coated cardboard boxes with tin covers The tin covers contained large amounts of lead, and this would seem to be a logical source for the lead found in the snuff Thus it would seem that we were dealing with another case of accidental contamination of snuff by lead If the present tin covers were replaced by paraffinized pasteboard covers, this part of the lead hazard could be eliminated, though it has not been proved that this is the only source of lead

In this particular case the portal of entry could be either gastro-intestinal or upper respiratory, depending on whether the snuff was chewed or snuffed That particulate matter can be absorbed from the nasopharynx has been well demonstrated by Blumgart[14] Using dogs prepared by means of a tracheal cannula and ligation of the esophagus so that lead could not enter either the lungs or the gastro-intestinal tract, he introduced solid lead carbonate into the nasopharynx After a lapse of from one to three days the animals were killed, and all tissues exclusive of the head and skin were found to contain considerable amounts of lead Analyses of the trachea, lungs and esophagus in these animals were negative for lead, showing that the only mode of entrance was through the nasopharynx Thus, lead need only reach the nasal passages in order to gain entrance into the body Naturally, these animals were exposed to large amounts of lead over a short period of time but, as he pointed out, the absorption was probably hindered by the loss of lead through drooling and by the fact that the nasal mucus was not concentrated by evaporation as in normal breathing In our patient the portal of entry was probably gastrointestinal as well as by way of the nasopharynx because he occasionally chewed snuff as well as snuffed it

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[2] Model H Warnung den toback nicht in bley aufzuheben Arch de med Pol Leipzig 2 250 1784

[3] Hassal A H Food and Its Adulteration London 1849 p 509

[4] Meyer M Ueber partielle Lahmungen der Extremitaten durch fortgesetzten Gebrauch von bleihaltigen Schnupftabak Arch f path Anat 9 209 1856

[5] Sonnenkalb E Ueber Bleigehalt der Schnupftabak mit besonderer Beziehung zu Leipzig Deutsche Ztschr f d Staatsarznk new series 13 191 1859

[6] Mayer Cause insolite de l intoxication saturnine Ann Soc de med d Anvers 38 475 1877

[7] Chambers Saturnine Disease in a Gas Engineer from Contact with Red and White Lead Lancet 1 60 1860

[8] Reese Owen Saturnine Disease from the Use of Snuff Adulterated with Lead Palsy of the Upper Extremities Lancet 1 61 1860

[9] Creegan, J J Letter on a Case of Lead Poisoning Caused by the Use of Snuff M Times & Gaz 2 443 1861

[10] Weaver Lead Poisoning by Snuff Brit M J 52 552 1890

[11] Garrod Cases Under the Care of Dr Garrod, Lancet 1 781 1870

[12] Stadler E Ein Fall von tötlicher Bleivergiftung durch Schnupftabak Cor Bl f schweiz Aertze 42 145 1912

[13] Ormsby R Aphonia Caused by Lead Poisoning Contracted by the Abuse of Snuff New York M J 52 552 1890

[14] Blumgart H L Lead Studies VI Absorption of Lead by the Upper Respiratory Passages J Indust Hyg 5 153 (Sept) 1923

SPONTANEOUS HEALING IN A VESICO-UTERINE FISTULA FOLLOWING LABOR

REPORT OF CASE *

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CHICAGO

The patient here discussed was first seen by me after she had been in labor for sixty hours, with the bag of waters ruptured at the onset of the pains In the interim an ampule of pituitary extract had been administered and had given rise to intense pain During this time numerous vaginal examinations had been made without attention to asepsis

The patient was sent to the hospital, where vaginal examination revealed a long soft, cuff-like cervix with an os of 5 cm The head was not engaged, and the sagittal suture was in the transverse diameter A number 3 Voorhees bag, which was inserted and ballooned, was expelled after fifty minutes and the cervix was almost completely dilated but not wholly effaced On account of the rapidity of fetal heart tones, the atonicity of the uterine musculature and the weakened condition of the mother, labor was terminated at once

In view of the fact that the patient had a moderately contracted pelvis and that the bag of water had been ruptured for seventy-five hours and also because of the existing temperature and the history of repeated vaginal examinations without asepsis, delivery by forceps was chosen rather than by section or version

Under ether anesthesia a deep, left, mediolateral episiotomy was done, and cervical incisions were made at points corresponding to 10, 2 and 6 on the clock Kielland forceps were applied and gentle traction was made, but the head could not be drawn into the pelvis The operator then resorted to version, delivering an 8 pound 14 ounce (4 Kg) baby in the next few minutes The placenta was delivered manually in toto, and the incisions repaired

On the morning of the fifth day the puerpera complained of inability to hold the urine, which was cloudy and contained masses of pus cells per microscopic field After catheterization and irrigation of the bladder, water was observed to come from the vaginal vault On instillation of a solution of methylene blue into the viscus a small stream of the solution was seen to come from the cervical os Cystoscopic examination revealed an area of trauma in the region of the left ureteral orifice, near the median line of the bladder A roentgenogram was made but it did not throw further light on the condition

Following catheterization and irrigation of the bladder each morning for five consecutive days a silver iodide preparation was instilled On the fourteenth day post partum the patient was discharged from the hospital with urine still trickling from the vaginal vault at intervals, though markedly diminished in quantity and less frequently than when attention was first called to the condition

Ten days following discharge, examination did not show any leakage from the bladder and a second examination two weeks later revealed a perfectly healed condition without any discomfort experienced on the part of the patient

Careful search of the medical and surgical bibliographies shows that vesico-uterine fistulas are relatively rare Jonquan [1] remarks that reports of such cases are very rare He believes that many cases of enuresis paralytica are due to such fistulas and that they disappear as the lesions go on to spontaneous healing In his own case nine days after a forceps delivery, urine was observed to come from the vaginal vault and examination revealed a perforation about 6 or 8 cm up in the cervical canal which seemed to have cut through the anterior portion of the cervix and to lead into the bladder But the opening into the latter was situated about 5 or 6 cm higher than that in the cervix

The peculiarity of this particular fistula, its oblique course from the posterior wall of the bladder to the cervix and the valvelike closure of the posterior bladder wall protecting the opening into the cervix led to the belief that a spontaneous healing might have been hoped for, since the uterus returned to its normal puerperal state For two weeks urine continued to flow involuntarily, in drops, from the vagina, but toward the end of the fourth week the patient retained the urine, micturition became voluntary, and reexamination did not show any evidence of the presence of the fistula

Verstraeten [2] reports the case of a sextipara who fifteen days after delivery complained of inability to hold the urine The labor had been a difficult one and of two days' duration On examination, urine was observed to come from the cervical os Cystoscopic examinations from time to time during the next three weeks did not reveal any change within the bladder but less urine came from the cervical os At the end of another week, incontinence had entirely disappeared the vagina was dry and the uterus completely involuted

Brodhead [3] reports the case of a sextipara, aged 37, who, following a forty-five hour labor, reported that on the fourth day post partum she "felt like a balloon' and complained of a hard swelling in the lower part of the abdomen Examination revealed blood-stained urine escaping from the cervix uteri with a large opening leading from the region of the internal os to the bladder The fistula was open for about three days after which it closed and remained so The autho suggests that the fistula may have been caused by a small rupture of the uterus resulting from the pituitary extract

Von Thompson,[4] Zweifel,[5] Dombier,[6] Gaume,[7] and Lavenant and Nagel [8] report cases of vesico-uterine fistulas, but none in which spontaneous healing resulted Under operative procedure however, the lesion responded readily to rapid closure

SUMMARY

Each of the ten cases reported here followed labor In three, forceps were applied, in two others an ampule of pituitary had been administered before delivery The remaining six patients gave a history of prolonged labor in which the uterine contractions were unusually strong Four of these had moderately contracted pelves In each of the ten cases the fetal membranes had been ruptured several hours previous to the delivery

CONCLUSIONS

1 Vesico-uterine fistulas may be the sequelae to traumatism in labor by forceps manipulation, either by

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* Read before the Jasper County Medical Society Joplin Mo April 19 1927

[1] Jonquan Vesicouterine fistule Paris chirurgical 1909

[2] Verstraeten C Observation de fistule vesicouterine guerie spontanement Ann Soc de med de Gand **54** 106 1876

[3] Brodhead G L Spontaneous Closure of a Large Uterovesical Fistula M Rec **98** 437 (Sept 11) 1920

[4] von Thompson H Zentralbl f Gynak **48** 2566 2568 (Nov 22) 1924

[5] Zweifel P Monat chr f Geburtsh Gynak **53** 3 (Oct 9) 1920

[6] Dombier M Thesis Paris chirurg **40** 80 1922

[7] Gaume Thesis Paris chirurg **13** 272 1921

[8] Lavenant and Nagel Vesicouterine fistule, Paris chirurg **75** 1133 1290 1916

carelessness or through incompetence, especially in an attempt at rotation

2 The condition may be brought about through a lack of *skill in doing a version*

3 These fistulas may follow an uninterrupted, prolonged labor in which there have been unusually strong uterine contractions, thereby keeping the fetal head imposed on the rami pubis with the bladder interposed between the head and the pubic bones

4 This type of lesion in the majority of cases reported has not, according to the history, been the result of traumatism on the part of the accoucheur, though he may have been reluctant to report this feature of his work

5 Practically all these fistulas have occurred in cases in which there was a prolonged labor, a moderately contracted pelvis, or a combination of the two, with the bag of waters rupturing several hours previous to the delivery

6 The lesion may be brought about following the administration of pituitary extract

7 Great care should be exercised in all labors in which it is necessary to intervene, especially in those in which the membranes have been ruptured for several hours

8 Vesico-uterine fistulas probably occur more frequently than is observed or reported, as a result, in many instances, of a small opening so situated as to make it a valvular type of lesion, thereby enhancing its opportunity for rapid union

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THE TREATMENT OF GENERAL PARALYSIS BY INOCULATION WITH MALARIA

III FOURTH-YEAR RESULTS *

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AND
GEORGE H KIRBY, M D
NEW YORK

Our second report [1] on the treatment of general paralysis by inoculation with malaria dealt with 106 male patients who had completed treatment prior to Dec 15, 1925 Of these, twenty-two had died,[1] so that on March 15, 1926, the date of preparing the foregoing report, there were eighty-three patients still living,[2] whose period of observation subsequent to treatment then ranged from three months to two years and nine months in duration Since Dec 15, 1925, fifty-nine additional patients have undergone the malaria treatment, but as the clinical results obtained in the latter have been essentially similar to those previously reported, the present communication will be concerned solely with the subsequent clinical course of the eighty-three patients who were alive on March 15, 1926 For it appears to us that observations on the ultimate fate of general paralytics subjected to the malaria treatment are of greater interest than the accumulation of additional data on the more immediate therapeutic results obtainable, especially since there now exists with regard to the latter a rather striking consensus of experience

These eighty-three patients, then, treated prior to Dec 15, 1925, *and alive on March 15, 1926, have now*—June 15, 1927—been observed over a period of time ranging from one year and a half to exactly four years In sixty-two of these cases this posttreatment period of observation has been more than two years, and in twenty-five of them three years or longer

DEATHS

Of the eighty-three patients alive on March 15, 1926, four have since died Their deaths took place seven months, one year and ten months, two years and six months, and three years and one month, respectively, subsequent to the completion of treatment The first of these must therefore be added to the nine previously reported,[1] who died within two to eleven months of completing their course of malaria Hence, of ninety-three patients [3] who survived treatment by more than a few weeks, ten died of general paralysis within the first year

The average expectancy of life exhibited by general paralytic males admitted to the New York State hospitals is 1 5 years [4] Thus, only the ten patients just mentioned (11 per cent of the ninety-three in question) have failed to achieve this average expectancy, whereas this period was somewhat exceeded (by from four months to one year and seven months) by three of the four patients who have died since March 15, 1926, and also has been exceeded, of course (by from a few weeks to two years and six months), by the seventy-nine patients still living—or, in sum, by 88 per cent of the ninety-three patients who survived the acute period of treatment [5]

Including the thirteen patients who died as the more or less direct result of the malaria itself, 22 per cent of the patients in this series (twenty-three out of 105 [3])—but, exclusive of the latter, only 11 per cent (10 out of ninety-three)—died during the first year of hospitalization, whereas, according to Pollock,[6] 58 per cent of untreated patients (325 out of 559) die within this period

UNIMPROVED CASES

From this point we shall confine the discussion of the patients [7] still living to the twenty-four who have now been under observation, since their treatment was completed, for a period of three years or longer Six of these, originally classified as unimproved, continue in the same therapeutic category but are nevertheless still living after an interval of between three and four years subsequent to treatment, four of the six, indeed, were among the first cases treated by us, so that even in the most recent of the four the period of posttreatment observation now lacks but a few weeks of being of four years' duration These four are further distinguished by the fact that their clinical status, in both a physical and a mental sense, differs in no demonstrable or observable way at the present time from that which they presented on admission, so far as it is possible to tell, their condition—and also that of a fifth patient, now under observation for three years and two months—has remained absolutely stationary throughout In the sixth patient there has been no very conspicuous mental deterioration during the period of exactly three years that has elapsed since treatment was completed, his physical state, however, has exhibited marked fluctuations, with a considerable decline on the whole

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* From the New York State Psychiatric Institute Ward's Island N Y

[1] Bunker H A Jr and Kirby G H The Treatment of General Paralysis by Inoculation with Malaria A Second Report Arch Neurol & Psychiat **16** 182 (Aug) 1926

[2] One patient achieved a very definite remission of more than moderate degree but committed suicide eight months after treatment he was previously reported not as a death but as a moderate remission (case 5 of our second report)

[3] That is 106 minus 13 who failed to survive their course of malaria (footnote 2)

[4] Pollock H M Annual Statistical Review of the Patients Treated in the State Hospitals and Private Licensed Institutions for Mental Disease Albany 1925 p 224 The average duration of life here given is based on 559 male patients with general paralysis who died during the year ended June 30 1924

[5] That is excluding the suicide referred to in footnote 2 who did not exceed the average life expectancy but might have done so

[6] Pollock Statistical Review p 225

[7] One of this group of twenty five three year patients died at the end of three years and one month as already explained

Hence, of ten 'unimproved' patients treated between three and four years ago, six are still living and five of them have shown no physical or mental retrogression whatever up to the present time Doubtful though the practical value of such an outcome may be the fact seems to point to a definite influence on these patients on the part of the treatment, it would appear to strengthen the impression expressed in previous articles that the malaria treatment has actually arrested the disease process in these patients even though at a stage when functional restitution was no longer possible

PARTIAL REMISSIONS

Two patients, originally classified as moderate remissions and now under observation for three years and for three years and three months, respectively, have shown no very appreciable alteration in their general condition throughout the period One of them it is true, has failed, since our second report was written, to make a satisfactory adjustment outside the hospital but has given no evidence whatever since his return to the ward of physical or mental retrogression, although it would now seem more appropriate to regard him as a slightly improved case only, in view of the very modest character of the mental improvement which he has, nevertheless, undoubtedly shown The second patient, on the other hand, is now indistinguishable from an example of full remission, but the material improvement which has taken place in this patient since the partial relapse which he began to exhibit nearly a year and a half after his course of malaria [8] we are inclined to attribute to the sixty-five injections of tryparsamide which he has since received, beginning nineteen months subsequent to the termination of the malaria treatment

FULL REMISSIONS

The sixteen patients in the present group of twenty-four who were originally classified as complete remissions continue, with two exceptions fully to deserve that ranking, after an interval since treatment varying from three years and one month to four years Hence there can be no doubt—as indeed is already evident from the reports of European clinics—that remissions in malaria-treated general paralytics may persist unaltered for at least three and a half to four years It should be added that none of these sixteen patients have received supplementary antisyphilitic therapy, with the single exception of one whose persistent pleocytosis caused us to be fearful of the ultimate outcome in his case [9]

RELAPSES

What is of especial interest, however, is the occurrence of the two exceptions to the foregoing—exceptions which have not so far been observed among the cases of complete remission followed for a period less than two years in duration as though a certain considerable interval of time—longer, moreover, than that usually seen in the case of "spontaneous" remissions—were required before eventual relapse took place in what it is to be hoped will prove to be only a small minority of these patients In one of the two instances referred to, the patient's mental retrogression—which, though perfectly definite, was of a nature and of a degree such as to be noticeable only to his wife, while he was able to continue at his occupation, that of typesetter, in a more or less satisfactory manner—had its inception exactly two years subsequent to his course of malaria At the end of about six months the patient regained to a fairly complete degree his previous status, and this relatively satisfactory situation has now persisted for exactly one year The other patient who relapsed did so three years and three months subsequent to his course of malaria, the retrogression which he exhibited was much more severe than in the previous case He gradually relapsed into the same dulness, apathy and loss of all energy and initiative (together with forgetfulness) which had characterized, although to a considerably greater degree, his initial psychosis He thus became wholly incapacitated for the occupation, that of caretaker and janitor of apartment houses, which he had carried on with entire efficiency since his discharge from the hospital early in 1924 At the same time he retained complete insight into his deteriorated state (as the other patient did not), and voluntarily applied for readmission to the hospital in March, 1927 It now seems very probable that at least a partial reestablishment of his earlier status will ensue in consequence of a second course of malaria, which he completed two months ago, on April 15, 1927

In view of the unfavorable prognostic significance which seems often to attach to a persistent pleocytosis in the spinal fluid in malaria-treated general paralytics,[1] it is of some interest that the latter patient's cell count was still slightly elevated not only at the end of three months but after one and one-half and also two and one-half years, while at three and one-half years, on readmission to the hospital, his cell count had risen to 35 per cubic millimeter

An additional point of interest in regard to the patient last described is the fact that he was one of the seven patients of the so-called simple dementing type of general paralysis in our series to attain a full remission [11] among these seven—four others of whom, incidentally belong in the same three-year group of twenty-five cases—he represented, moreover, one of the most satisfactory results The other instance of partial relapse which we have cited was classified as a not very clear cut example of the expansive type

The matter of clincal type suggests mention at this point of the behavior, from the standpoint of relapse which is occasionally observable in patients of the so-called manic type of general paralysis—a species of reaction worthy of further study, and of some practical importance in a prognosis which is otherwise relatively favorable in cases of this description [10] Our experience in the treatment of general paralysis has enabled us to include to date three examples of an almost immediate shifting, subsequent to treatment, to the opposite phase of the quasi-manic-depressive reaction exhibited by these patients In two instances an extremely active "manic" phase, which terminated approximately six weeks and three and a half months, respectively, subsequent to malaria treatment, was succeeded by an extended period of depression with retardation which had its onset six weeks and two months respectively, subsequent to the termination of the hyperactive phase In the first case, the depression lasted a little less than six months, and the patient's mental condition has now been essentially normal for the past thirteen months, in the other patient treated one year ago the depression has now lasted seven months and is still definitely in evidence In each instance it will be noted, the depression appeared shortly after the patient s discharge from the hospital, at a time when for more than a month he had appeared to represent an excellent therapeutic result

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[8] Case 4 of our second report

[9] Case 8 of our second report

[10] Kirby G H and Bunker H A Jr Types of Therapeutic Response Observed in the Malaria Treatment of General Paralysis Am J Psychiat 6 205 (Oct) 1926

The third patient, since he was a tryparsamide and not a malaria treated case, is mentioned only for the sake of completeness, because his depression, which followed the manic phase at an interval of two months and persisted for a period of three months, was perhaps more typical of and less distinguishable from a true manic-depressive depression than that of any of the other three patients here cited, he has now been actively engaged in business, without recurrence of mental symptoms, for nearly three years[11] In still another patient on the other hand, a brief period of rather mild hypomania was after a short interval succeeded, prior to malaria treatment (though subsequent to a small amount of tryparsamide therapy), by a retarded depression, although the depression lightened temporarily after the course of fever, it deepened again after a few weeks, and has now been present, in addition to obvious mental deterioration, throughout a posttreatment period of twenty months[12]

SUMMARY

1 Of ninety-two male patients with general paralysis who received malaria treatment prior to Dec 15, 1925, and who survived their course of fever therapy, ten died within two to eleven months of its completion Thus, 11 per cent died within a year of admission to the hospital, as compared with about 58 per cent of untreated general paralytics who do so

2 Of the eighty-three remaining patients, whose posttreatment period of observation now (June 15, 1927) ranges from one and one-half to four years, three died during the second, third and fourth years, respectively Thus, 88 per cent of the total ninety-three patients have exceeded the period of one and one-half years which is the average expectancy of life, at the time of admission, of general paralytic males in the New York state hospitals

3 Of the twenty-five patients whose posttreatment period of observation now exceeds three years, one has since died (as noted), five, though wholly unimproved, have preserved an absolutely stationary mental and physical status, and a sixth has deteriorated physically rather more conspicuously than mentally, one slightly improved patient has shown no evidence of retrogression, and one much improved patient has registered a considerable further improvement (probably ascribable, however, to subsequent tryparsamide therapy), of sixteen patients originally classified as full remissions, fourteen have maintained this status to the full In only one of the latter group of fourteen has supplementary antisyphilitic therapy been used

4 Two patients who originally exhibited complete remissions suffered a moderate relapse, with partial return of symptoms, two years and three years and three months, respectively, subsequent to treatment A good degree of restoration took place after six months in the first, in the second the outcome is not as yet fully determined

5 In three patients of the so-called manic type of general paralysis (out of a total of nineteen of this type) the hyperactive phase, after subsiding subsequent to treatment, was succeeded at an interval of about two months by a rather protracted depression with retardation—a point of some importance in the prognosis of "manic" cases

6 Our experience with the malaria treatment of general paralysis has yielded two outstanding observations to date (*a*) Of ten 'unimproved" patients treated between three and four years ago, six are still alive and five of them have manifested no physical or mental retrogression whatever, (*b*) of sixteen full remissions, fourteen have maintained that status for more than three years, and seven for more than three years and a half

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[11] It is of interest in the light of the fairly frequent familial occurrence of manic-depressive psychosis proper that the mother of this patient was definitely a victim of that mental disorder

[12] For full notes on the subsequent clinical course in this patient we are indebted to the courtesy of Dr Albert M Barrett of the Michigan State Psychopathic Hospital

Clinical Notes, Suggestions and New Instruments

PARALYSIS OF THE RIGHT DIAPHRAGM ASSOCIATED WITH BRACHIAL PALSY *

MENDEL ZELIGS M D CINCINNATI

It would appear from the scarcity of reports of diaphragmatic paralysis due to birth injury that it is a rare condition Weigert,[1] reporting a case, was able to find in the literature reference to only four others occurring in early infancy In none of these, with the exception of Weigert's case, was the condition verified by fluoroscopic examination

Kofferath, in 1921, and Epstein,[3] in 1927, reported cases very similar to mine, that is, diaphragmatic paralysis due *to injury of the phrenic nerve, associated with a brachial palsy* Friedman and Chamberlain[4] reported a case in a child, aged 17 days, in whom the symptoms and physical signs while indicating pneumonia, led to a diagnosis of right diaphragmatic paralysis by fluoroscopic examination This case was also associated with a paralysis of the right arm which was noted soon after birth Dyson[5] reported a case of diaphragmatic paralysis due to injury of the phrenic nerve In this instance the nerve had been injured by scissors employed to cut the cord, which was around the infant's neck There was no paralysis of the arm, and the child made a complete recovery in six months

REPORT OF CASE

E C, aged 4 months, was admitted to the Cincinnati General Hospital in the service of Dr A Graeme Mitchell May 25, 1925, because of a gastro-intestinal disturbance The child had been born by a difficult breech delivery at full term, and had been cyanotic and rather hard to resuscitate There were no convulsions Soon after birth it was noticed that the child was unable to move its right arm or forearm although the paralysis did not involve its wrist and fingers

The family history was unimportant There had not been any other pregnancies, and there was no history of tuberculosis or syphilis

Physical examination showed an undernourished child weighing 9 pounds 3 ounces (4 2 Kg) Respiration was rapid, and there was slight retraction of the lower interspaces on the right side There was no facial weakness The pupils were equal and regular and reacted to light, nystagmus or other abnormal eye movements were not noted The head was held rotated to the left and flexed to the right, and could not be moved to the right past the midline The lower part of the right side of the chest was somewhat bulging The percussion note over this area extending up into the midscapular region was dull Over the upper part of the right side of the chest and on the entire left side of the chest it was resonant Breath sounds over the left side were somewhat exaggerated, but they were diminished over the upper right part of the chest and were markedly suppressed over the area of dulness over the lower right side of the chest, expiration in the last-mentioned region was somewhat prolonged and almost tubular in quality Vocal resonance was increased in this region and occasional fine rales were heard At times, the gurgling of peristaltic waves was heard in the right lower part of the chest The heart was definitely displaced to the left The sounds were rapid and regular, but no murmurs were heard The liver was not palpable The lower edge of the spleen could be just felt under the costal margin The right biceps and triceps reflexes and the wrist jerk were absent on the right side but were normal on the left

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* From the B K Rachford Department of Pediatrics University of Cincinnati College of Medicine

[1] Weigert Richard Ein geheilter Fall von Relaxatio (Eventratio) diaphragmatica Beitr z klin Chir 1920 p 119 (quoted by Friedman and Chamberlain)

[2] Kofferath Walter Ueber einem Fall von rechtseitiger erbscher Lahmung und Phrenikuslahmung nach Zangenextraktion Monatschr f Geburtsh u Gynak 55 53 (July) 1921 (quoted by Epstein)

[3] Epstein I W Diaphragmatic Paralysis Resulting from Injury of the Brachial Plexus Am J Dis Child 34 634 (Oct) 1927

[4] Friedman Emanuel and Chamberlain R S Phrenic Nerve Injury in the New Born J A M A 86 934 (March 27) 1926

[5] Dyson J E Paralysis of Right Diaphragm in New Born Due to Phrenic Nerve Injury J A M A 88 [illegible] (Jan 8) 1927

A diagnosis was made of right brachial palsy and torticollis due to birth injury, with a probable diaphragmatic hernia

Fluoroscopic examination revealed an increase in the densities over the right thoracic region with the cardiac and mediastinal shadows displaced to the left The right half of the diaphragm was high Barium given by mouth showed that there was no bowel above the diaphragm There was a seesaw movement of the diaphragm, so that during inspiration the right side would go up accompanied by the liver while the left side would go down, the heart being pushed to the left and downward A diagnosis of paralysis of the right half of the diaphragm was made

SUMMARY AND COMMENT

Because of the close anatomic relationship of the phrenic nerve with the brachial plexus, diaphragmatic paralysis is probably of much more frequent occurrence than the number of reports of this condition would indicate The dulness and suppression of breath sounds with the gurgling of peristaltic waves found in the right lower part of the chest made the diagnosis of a diaphragmatic hernia probable Diaphragmatic paralysis was demonstrated by a fluoroscopic examination If this procedure should be carried out in every child with a brachial palsy, many similar cases might be discovered

670 Rockdale Avenue

REPORT OF A PATIENT EXHIBITING THREE INFECTIONS WITH SYPHILIS *

Charles R L Halley M D, Washington, D C

Instances of second infection with syphilis are still sufficiently infrequent to be published in detail when observed Examples of patients exhibiting a third infection with syphilis are exceedingly rare, so much so that each case should be reported fully

In collaboration with Dr Harry Wassermann, I have recently reviewed, with especial reference to the time of treatment of the first infection, all the instances (about 700) of second syphilitic infection ("reinfection," "superinfection") reported in the literature since the introduction of arsphenamine, in 1910 This study, which is now being prepared for publication, discloses, among other facts, that there have thus far been published only eight satisfactory reports of patients who have acquired a third infection with syphilis The present case report is, so far as I am aware, the first satisfactory instance in the American and English literature This patient's record is briefly mentioned in the study referred to, the discussion and conclusions of which need not be given here It will be noted that the patient was observed in this clinic during each of his infections

REPORT OF CASE

First Infection—A white man, born in 1892, first seen in the syphilis clinic of the Johns Hopkins Hospital, Dec 4 1914 after having been exposed about twelve weeks previously, had developed, about six weeks before admission a penile lesion, and, about three weeks later, a rash on the back face and knees Lesions had appeared in the mouth about three days previously A complete physical examination revealed a husky voice, a mucous patch on the left anterior pillar, a maculopapular eruption on the back, buttocks, and extensor surface of the arms, a much enlarged left epitrochlear gland the remains of an inguinal adenitis and a scar on the inner lamella of the prepuce Arsphenamine 0 5 Gm was given December 4, December 12, 0 3 Gm was given, and Jan 2 1915 0 3 Gm was administered The Wassermann reactions were positive December 5 and December 13 negative December 22 and doubtful Jan 2, 1915 The patient then disappeared from observation

Second Infection—The patient was next seen in the genito-urinary clinic Aug 11 1923 nearly nine years after the first visit He stated that he had married in 1919 and that his wife had had subsequently, one healthy child, and no miscarriages Three weeks prior to admission he had been exposed to venereal infection and about eighteen days later he had noticed a painless genital lesion, like a pimple, which was spreading In the genito-urinary clinic, examination revealed on the superior edge of the corona a slightly indurated lesion with a clean base Spirochetes were demonstrated In the syphilis clinic August 13 physical examination revealed shotty enlargement of the cervical, axillary, inguinal (especially the left) and left epitrochlear glands On the mucous surface of the prepuce there was an oval shallow ulcer 1 by 0 5 cm regular in outline, having a clean base covered with a yellowish gray membrane, and showing tiny red dots indicating thrombosed capillaries There was definite induration with a zone of surrounding edema, the lesion exuded clear serum in which were present a number of rather short spirochetes On the same day the patient was given an injection of arsphenamine the dosage of which was unfortunately, not recorded, the Wassermann reaction being positive The patient did not return

Third Infection—The patient was next seen in the syphilis clinic, June 10 1927, twelve and a half years after the first infection, and nearly four years after the second He stated that since his last visit in 1923 he had not had further treatment and that recently he had been repeatedly exposed to venereal infection Five days previous to admission, he had noticed a small penile lesion A complete physical examination revealed a number of almond-sized rubbery glands in the left inguinal region and a few smaller glands in the right the left epitrochlear gland was pea-sized and indurated and there were varicose veins in the lower extremities On the left side of the shaft of the penis, in the midportion was a round lesion 1 cm in diameter, exhibiting moderate parchment-like induration, and covered with a thin crust, removal of which disclosed a clean base with outlines rather more hemorrhagic than the remainder of the ulcer In the clear serum two typical spirochetes were demonstrated This primary lesion was at a different site from those seen in 1914 and in 1923 On the same day, the blood Wassermann reaction was negative and tests of the spinal fluid gave the following reactions globulin, 0, Wassermann negative, mastic, 0000000000

This patient exhibited, then, on the shaft of the penis, a typical chancre, which was so diagnosed clinically without any hesitation, there was also a regional adenitis In addition, two typical specimens of *Spirochaeta pallida* were demonstrated in the serum from the lesion

A careful inquiry into the history and a thorough physical examination failed to reveal any evidence of syphilis which might have resulted from either of the two previous infections Furthermore examination of the blood serum and of the spinal fluid, each taken on the day of admission, did not disclose any signs of syphilis Hence, this patient was considered as presenting undoubted evidence of a primary syphilitic lesion

It is concluded, therefore, that this patient, after having had two previous infections with syphilis, acquired a third time a lesion which in every respect suggested a third primary syphilitic infection

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* From the Medical Clinic of the Johns Hopkins Hospital Baltimore

Special Articles

THE FREQUENCY OF BOTULISM

REPORT OF OUTBREAKS FOR 1927

In a report[1] on outbreaks of botulism for 1926 the data were thus summarized:

There have been reported in the United States and Canada from 1899 to 1927 and including one outbreak from England and one from Argentina, 151 outbreaks, or a total of 518 cases with 347 deaths, giving a case mortality of 67 per cent; fifty-five outbreaks have been proved toxicologically and bacteriologically. If there is taken an eight year period, from 1918 to 1925, inclusive, an average of approximately thirteen outbreaks has occurred annually.

The accompanying table includes all proved and clinically probable outbreaks of botulism that have occurred in 1927.

It will be noted that only five outbreaks occurred in 1927, when the expectancy average was thirteen. It is decidedly interesting to note that all outbreaks were due to home-canned foods. The food involved in two outbreaks was home-canned corn, in two, home-canned string beans, and in the remaining outbreak, home-canned pears.

All the outbreaks reported occurred in western states. This is in accordance with established epidemiologic facts that the distribution of the spore of *B. botulinus* in the soils of western states is wide and the number of outbreaks of botulism may be in direct ratio to this distribution and the safety of the canning methods used, particularly in the home, for fish, meat and vegetables, such as corn and string beans and fruit, such as olives and apparently also pears.

Cases of Botulism Reported in 1927

Causative Food	Method of Preparation	Persons Ill	Death	Location	Type Demonstrated	Comment
1 String beans	Home canned	3	2	Rocky Ford, Colo.	No laboratory examination	Spoiled
2 Corn	Home canned	1	1	Ono, Shasta Co., Calif.	Type A	Spoiled
3 Pears	Home canned	2	2	Los Banos, Calif.	Type A	Spoiled
4 String bean	Home canned	1	1	San Francisco	Type A	Spoiled
Corn	Home canned	4	4	near Plevna, Montana	Type A	Spoiled

Outbreaks 1, 2, 3 and 4 are from the records of Dr. K. F. Meyer, Hooper Foundation, University of California; outbreak from record of Montana State Board of Health, Dr. W. F. Cogswell, secretary, and Dr. Glen D. Wilk, director of division of food and drugs.

Spoilage of the food consumed was visibly present in four outbreaks, and in the fifth (home-canned corn, Montana). This was probably also true, as the home-canned corn was made into a soup by a child and other jars of the corn, as likewise those of home-canned string beans and home-canned peas found in the home, indicated spoilage. Moreover, the laboratory examinations of the contents of other jars of the home-canned corn revealed them to be toxic and to contain toxic strains of *B. botulinus*.

SUMMARY

In the United States and Canada from 1899 to 1928, including one outbreak from England and one from Argentina, 156 outbreaks have been reported, a total of 529 cases with 357 deaths, giving a case mortality of approximately 67.5 per cent. Fifty-nine outbreaks have been proved toxicologically and bacteriologically.

THE STATUS OF INTRAVENOUS THERAPY

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NEW YORK

(Continued from Vol. 88, p. 1807)

IV. INTRAVENOUS USE OF DYESTUFFS AS ANTISEPTICS

In recent years the chemotherapeutic effects of dyestuffs have been actively studied. As in other branches of chemotherapy, the attempts to use dyestuffs have proceeded from the point of view of Ehrlich's theory of chemotherapeusis, namely, to find and use dyestuffs with a powerful, possibly specific affinity for, and a consequent toxic action on the protoplasm of the parasites, and little or no affinity for that of the host.

From this standpoint, it was natural that intravenous therapy should have been tried in generalized infections in the hope of producing a parasitotropic agent of the maximal concentration within the limits imposed by toxic organotropic effects. It was also characteristic that clinical trials should have been made before adequate animal experimentation had shown what were the toxic and lethal limits, with the result that the literature now contains a considerable number of reports of various deleterious results.

Before going on with an attempt to evaluate the results achieved, it will be well to take into account the changing point of view of the leading students of chemotherapy. Dale[1] has recently reviewed the whole subject in an able fashion, pointing out that

> In the action of almost every remedy which has proved of value in the specific cure of infection there are features which cannot be interpreted by a strict application of Ehrlich's distribution hypothesis, the discrepancies begin to show a new congruity among themselves—the conception of a remedy, not killing the parasites immediately, but modifying their virulence or lowering their resistance to the body's natural defenses, of a remedy not acting as such, but in virtue of the formation from it in the body of some directly toxic product either by a modification of its structure or by its union with some tissue constituent, of an affinity of the remedy for certain cells of the host's body leading to the formation of a depot from which in long persistent—never dangerous concentration—the curative substance is slowly released, all these conceptions present themselves again and again as necessary for the rationalization of the effects observed.

Chemotherapeutic research is quite likely to abandon the quest of the elusive *therapia sterilisans magna*, and to assume the directions indicated by Dale.

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[1] The Frequency of Botulism, J. A. M. A. 88: 1321 (April 23) 1927.

[1] Dale, H. H.: Lancet 2: 257 (Aug. 9) 1924.

GENTIAN VIOLET

In 1912, Churchman began his studies of gentian violet, which he had found to have selective effects on certain bacteria Since then a considerable literature has grown up concerning the intravenous use of this dye in a variety of generalized infections with positive blood cultures, particularly infections with staphylococcus and the hemolytic streptococci, and, more recently, with *Streptococcus viridans* infections Many studies have been made of the effects of dyestuffs on localized inflammatory processes, but at present our attention will be confined to those in which the barriers have broken down sufficiently to permit invasion of the blood stream and dissemination of the infecting agent

Churchman,[2] in the general discussion of this subject, has pointed out the wide variations in the significance of the phenomenon of bacteremia He points out that bacteria are not to be regarded as circulating round and round for an indefinite period in the blood stream Their source is a focus of infection, their destination other organs in which they may set up lesions or the filtering organs If one eliminates the source, as by complete excision of the focus the supply is cut off They will then disappear fairly soon from the blood stream, provided they have not already produced secondary foci elsewhere and provided the defensive mechanism of the body has not already broken down

Gatch, Trusler and Owen[3] also emphasize the fact that general septicemia has an extremely variable clinical course, which frequently ends in spontaneous cure These are points which are not sufficiently taken into consideration in some of the more enthusiastic clinical reports They failed to accomplish a *therapia sterilisans magna* in rabbits infected with *Staphylococcus aureus* and treated shortly after with gentian violet or mercurochrome intravenously Large doses seemed to hasten death in the presence of an overwhelming infection They observed the spontaneous recovery from sepsis of an apparently moribund patient, which was quite as miraculous as any of those attributed to the use of dyes They also recorded the failure of intravenous dye therapy in cases of infection by *Streptococcus hemolyticus* and with vibrion septique

Shallenberger[4] reported five cases of phlebitis following delivery or operations which were apparently relieved by intravenous injections of gentian violet in doses of 5 mg per kilogram in a concentration of 0 5 per cent He remarks that a concentration of 1 per cent sometimes causes localized thromboses of veins at the site of injection

Hinton[5] reported the results of the use of gentian violet in eleven cases of extreme sepsis, with improvement noted in seven, no improvement in three, and death in one Surgical treatment was applied in all cases in addition to the dye

Horsley[6] was convinced of the value of gentian violet used intravenously in severe sepsis, especially when a staphylococcus was the predominating organism Young and Hill[7] describe enthusiastically the results in seven cases treated with mercurochrome and five with gentian violet

The possibility of using gentian violet in subacute bacterial endocarditis is suggested by Major,[8] who reported treating a negress with a *Streptococcus viridans* bacteremia The only evidence of the existence of an endocarditis was a blowing systolic murmur transmitted toward the axilla At any rate, two blood cultures had been positive Four injections of the dye were made at intervals of forty-eight hours (dose 5 mg per kilogram, concentration 1 in 500) After the first dose, fever disappeared The patient remained entirely well during seven months Seven blood cultures made after treatment remained sterile The result is sufficiently encouraging to warrant further observation of this method of treatment, with due regard for the fact that there are a few recorded cases of spontaneous recovery from subacute bacterial endocarditis or at least from *Streptococcus viridans* septicemia Major quotes a statement of Libman's that he had seen eight recoveries and Graham and his co-workers[9] have recorded such cases Others have failed to duplicate Major's unique experience Reed and Lum[10] used gentian violet in *Streptococcus viridans* sepsis without observing either benefit or untoward effects

From a consideration of the clinical reports on gentian violet, it appears that 5 mg per kilogram of body weight is the maximum safe dose The concentration should not be greater than 0 5 per cent, and some writers recommend a more dilute solution, 0 25 per cent

In animal experiments on gentian violet Gatch, Trusler and Owen[3] did not find any toxic effects from doses of 5 mg per kilogram If these doses were repeated every seventy-two hours the animals lost weight Doses of from 10 to 15 mg per kilogram were less toxic if given in 1 in 1,000 solution in physiologic sodium chloride solution than a similar dose in plain aqueous solution Doses of 20 mg per kilogram produced death in a rabbit in nine days with degenerative changes in the kidneys, liver and spleen, fibrosis of the heart muscle and pulmonary congestion A dose of 50 mg per kilogram produced death from respiratory paralysis

After injection in man the skin and mucous membranes take on an alarming cyanotic color which may last for three or four hours In some cases there is nausea Hinton noted venous thromboses in four of eleven patients treated One patient had a pylephlebitis The occurrence of miliary vesicular eruptions has been observed with the presence of organisms in the vesicles

The fate of injected gentian violet is not entirely known Churchman and Herz[11] found that it had disappeared from the blood in bacteriostatic amounts in from forty minutes to an hour after injection They showed that the disappearance of the dye was not due to chemical combination with the blood itself Some of the visible mucous membranes remained stained for forty-eight hours More will be said on this subject under a general discussion of the excretion of injected dyestuffs Hirschfelder, Malmgren and Creavy[12] could not find any evidences that gentian violet passed from the blood into edema fluid produced by paraphenylendiamine

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[2] Churchman J W Intravenous Use of Dyes J A M A **85** 1849 (Dec 12) 1925

[3] Gatch W D Trusler H M and Owen J F Treatment of General Septicemia by Gentian Violet and Mercurochrome 220 Soluble J A M A **85** 984 (Sept 19) 1925

[4] Shallenberger W F Surg Gynec Obst **39** 291 (Sept) 1924

[5] Hinton Drury Results of the Intravenous Use of Gentian Violet in Cases of Extreme Septicemia Ann Surg **8** 687 (March) 1925

[6] Horsley J S Jr Virginia M Monthly **52** 139 (June) 1925, abstr J A M A **85** 306 (July 25) 1925

[7] Young H H and Hill Justina H The Treatment of Septicemia and Local Infections by Intravenous Injections of Mercurochrome 220 Soluble and Gentian Violet J A M A **82** 669 (March 1) 1924

[8] Major R H Recovery from Subacute Infective Endocarditis Following Gentian Violet Therapy J A M A **84** 278 (Jan 24) 1925

[9] Graham Duncan Oille J A and Detweiler H K Further Report on Patients Recovered from Subacute Bacterial Endocarditis abstr J A M A **82** 1721 (May 24) 1924

[10] Reed A C and Lum D D Toxic Results of Dye Treatment in Septicemia J A M A **83** 1681 (Nov 22) 1924

[11] Churchman J W and Herz L F The Toxicity of Gentian Violet and Its Fate in the Animal Body J Exper Med **18** 579 1913

[12] Hirschfelder, A D Malmgren G and Creavy D J Pharmacol & Exper Therap **24** 459 (Jan) 1925

When the dye is prepared, the solution should be made from freshly distilled water collected in a sterile flask After the dye is dissolved, enough salt to produce physiologic sodium chloride solution is added to a volume of water slightly in excess of the final required volume, which is marked on the flask After filtration, the solution is boiled down to this mark When cooled to body temperature, it is injected Chilling of the solution sometimes causes visible particles of the dye to form If this occurs, the solution is discarded

Venous thromboses will occur less frequently if small needles are used, with gentleness in venipuncture, slow injection and the use of concentrations of the dye under 0 5 per cent

MERCUROCHROME 220 SOLUBLE

In 1919 Young, White and Swartz[13] announced the preparation of a new germicide, dibrom-oxymercury-fluorescein, or its sodium salt, called mercurochrome-220 soluble They described its properties and use in urinary tract infections In 1924, Young and his co-workers[14] reported enthusiastically on the results of the intravenous use of mercurochrome in such cases, in *Streptococcus hemolyticus* sepsis, in erysipelas following or complicating scarlet fever, and in retroperitoneal and perinephritic infection Others are finding it seemingly of value in pyelonephritis

Avison and Koo[15] stated that they had cured chronic malaria in 100 per cent of cases treated with 0 003 Gm of mercurochrome per kilogram The original of this article was not seen However, Kingsbury and Kanagarayer[16] report failure of mercurochrome therapy in malaria in two cases In both instances, rigors recurred soon after the cessation of treatment

Reports of toxic phenomena were meanwhile appearing from a variety of sources Bunten,[1] Guy,[18] and Roeder and Judd[19] reported instances of salivation Young and Hill[7] mentioned one instance of nausea, vomiting, diarrhea and transient albuminuria in a patient who received 6 8 mg of the dye per kilogram of body weight Reed and Lum[10] observed diarrhea with mucus and blood in the stools in several instances Piper[20] reported anuria with death forty-eight hours after injection of mercurochrome in a patient who seemed fatally ill of *Streptococcus hemolyticus* sepsis, a result not necessarily attributable to the dye

Dosage—Reviewing the reported experience with mercurochrome, it appears that a single intravenous injection of not more than 5 mg per kilogram of body weight, in a solution of 1 per cent, is reasonably free from danger When a dose of 6 mg per kilogram or more was employed, toxic effects were reported Young and Hill[7] stated that dogs tolerate the dye to the extent of 10 mg per kilogram, though one of their patients showed moderately severe mercurial poisoning with a dose of 6 8 mg per kilogram However, Young and Birkhaug[14] gave 7 5 mg per kilogram without toxic effects

Excretion—Mercurochrome is excreted in the bile, in the stools and in the urine

Young[14] determined the concentration of the dye in the stools after an intravenous injection and found in the first four hours 1 10 000, from the fourth to the sixth hours, 1 25,000, from the sixth to the eighth hours 1 50,000, and from the thirteenth to the twenty-fourth hours, 1 100,000 The quantities of stool were not recorded

The urine was measured and the concentration reached 1 10,000 in from three to five hours, 1 50,000 in from five to seven hours, 1 75,000 in from eight to twelve hours, and 1 100,000 in from thirteen to twenty-four hours The total amount in the urine was about 15 per cent of the total amount injected

Hill and Scott[21] have studied the excretion of mercurochrome in the bile in rabbits following the injection of 5 mg of the dye per kilogram of body weight They found that it appeared in the bile within fifteen minutes in a concentration of from 1 5,000 to 1 25,000 during the first two hours, and from 1 8,000 to 1 50,000 during the next two hours with complete disappearance from the bile in twenty-four hours After administration by mouth, it also appeared in the bile, but in lower concentration They recommend mercurochrome in the treatment of chronic carriers of typhoid and paratyphoid infections

Similar studies were also made by Hench, Snell and Green[22] on dogs with permanent biliary fistulas After injection of 5 mg per kilogram, they found that the dye appeared in fifteen minutes, and reached a maximum concentration in one hour of from 0 2 to 0 3 per cent, falling to from 0 05 to 0 15 per cent after six hours While they find that the dye dissolved in bile in vitro has a bactericidal action on *B coli* in a concentration of 1 20,000, the bile in which higher concentrations of the dye were excreted did not have the anticipated action against the bacteria They suggest that this may be due to the excretion of the dye in a conjugated or otherwise altered form, so that its bactericidal action is greatly reduced

In closing this discussion of mercurochrome, it is well to quote one of Piper's[20] remarks "We cannot too strongly impress on the profession that in spite of reports of brilliant recoveries, this is undoubtedly a dangerous procedure and is warranted only by the severity of the condition with which we are confronted "

ACRIDINE DERIVATIVES

Thus far this discussion has concerned itself with the two dyestuffs which are at the moment in the height of fashion Another group, whose popularity seems to be waning, deserves some attention namely, the acridine dyes One of these, 3 6 diamino 10 methylacridinium, has been prepared by Benda and used by Ehrlich in trypanosome infections—hence its name trypaflavine In 1917, interest was aroused in the use of members of this group in the treatment of bacterial infections by Browning and his co-workers,[23] who

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13 Young H H, White E C and Swartz E O A New Germicide for Use in the Genito Urinary Tract J A M A **73** 1483 (Nov 15) 1919

14 Young and Hill (footnote 7) Young H H and Birkhaug Konrade The Cure of Scarlet Fever Complicated with Erysipelas and Streptococcus Septicemia J A M A **83** 492 (Aug 16) 1924 Young H H Cure of a Retroperitoneal and Perinephritic Infection (Abscess) by Intravenous Injection of Mercurochrome Bull Johns Hopkins Hosp **35** 14 (Jan) 1924

15 Avison D B and Koo B China M J **39** 383 (May) 1923 abstr J A M A **85** 149 (July 11) 1925

16 Kingsbury A N and Kanagarayer K Indian M Gaz **60** 355 (Aug) 1925 abstr J A M A **85** 1256 (Oct. 17) 1925

17 Bunten T C Salivation Due to Intravenous Use of Mercurochrome J A M A **82** 1443 (May 3) 1924

18 Guy C C Stomatitis Following Injection of Mercurochrome 220 Soluble in a Tuberculous Sinus J A M A **82** 2119 (June 28) 1924

19 Roeder C. A and Judd W H Nebraska M J **10** 37 (Feb) 1925 abstr J A M A **84** 852 (March 14) 1925 (Original not seen)

20 Piper E B Am J Obst & Gynec **9** 17 (Jan) 1925

21 Hill Justina H and Scott W W Mercurochrome 220 Soluble as Biliary Antiseptic Arch Int Med **35** 503 (April) 1925

22 Hench Snell and Green J Pharmacol & Exper Therap **25** 142 143 1925

23 Browning C H Gulbranson R Kennaway E L., and Thornton L H D Flavine and Brilliant Green Powerful Antiseptics with Low Toxicity to the Tissues Brit M J **1** 73 (Jan 20) 1917 Browning C H Gulbranson R and Thornton L H D Ibid **2**: 70 (July 21) 1917

found several desirable attributes of these substances They were found to possess high antiseptic and bactericidal action in vitro, unchanged or augmented by the action of serum, combined with relative freedom from inhibitory effect on phagocytosis

In experimental tuberculosis, the studies of Petroff [24] and of Smith [25] did not give any evidence of a favorable effect on the progress of the tuberculosis when acridine dyes were employed, although in vitro these dyes were found to have a marked inhibitory effect on the growth of tubercle bacilli

Intravenous injections of acriflavine have been employed by various observers in the treatment of epidemic encephalitis It is impossible properly to evaluate the results in a disease with a symptomatology and clinical course so widely varied, without observing an enormous number of treated cases and controls

Reports of toxic effects of the acridine dyes are not lacking John [26] observed photosensitivity of mice injected with trypaflavine Meleney and Zau [27] studied the effects of intravenous injections on the number of leukocytes and on their phagocytic activity, on the fragility of red corpuscles, on clotting and bleeding time, and on the development of bactericidal or bacteriostatic activity of the blood With lethal doses, degenerative changes occurred in the convoluted tubules of the kidney and central degenerations were observed in the liver lobules With nonlethal doses, they found a rise in blood urea content, and albumin and casts in the urine, indicating renal injury with doses as small as 2 5 mg per kilogram With larger doses, suppression of urine was observed In experimental infections in animals, acriflavine was found not to possess any sterilizing action, and in view of the injury to liver and kidneys, it was felt that the dye was a handicap to the animal in its fight against infection

The question of the value of intravenous dye therapy cannot be considered closed by any means In this review, only a few of the dyes that have been used have been considered Only the dyes that have been extensively studied have been included The question of the local use of dyes is quite separate from that of their intravenous use, which is the particular phase with which we are concerned

Our knowledge of the fate of intravenously injected dyes is progressing as the result of such studies as those of H P Smith [28] This knowledge is still far from complete, and at the present moment it is extremely difficult to find any principles on which one could predict *a priori* the fate of a particular dye Many factors undoubtedly enter in, such as the chemical structure, the nature of the charge on the particles, and the degree of dispersion A good discussion is given by Mollendorff [29]

Hirschfelder, Malmgren and Creavy [12] have produced edema in animals with paraphenylendiamine The edema fluid was penetrated gradually by mercurochrome and acriflavine injected into the blood Mercurochrome diffused more rapidly and in higher concentration than acriflavine, while gentian violet did not penetrate at all When doses comparable to those used clinically were employed, the concentration in edema fluid was not bactericidal or bacteriostatic

CONCLUSION

Finally, it may be said that extreme caution is indicated in clinical trials dealing with all new therapeutic agents whose mode of action and fate in the body are incompletely known Those who employ dyes in the treatment of systemic infections should avoid toxic doses It is important that the proper surgical care of foci of infection in septicemia should not be neglected Convincing evidence of the beneficial effects of therapeutic procedures in infectious diseases requires careful comparison with a control series of similar cases untreated by the procedure in question Failure to make such control observations detracts from the evidence in favor of the intravenous use of dyestuffs in many of the infections in which they have been employed

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Council on Physical Therapy

REPORT OF THE COUNCIL

The Council has authorized publication of the following report H J Holmquest, Secretary

AURICULATOR NOT ACCEPTABLE

The Auriculator, designed and submitted for consideration by Dr Maury M Stapler of Macon, Ga , is stated to be a device for treating certain classes of deafmutism According to the designer's description, the apparatus consists of a metal tree, in the body of which is a thumb valve One end of the tree terminates in four branches for the attaching of a like number of pieces of rubber tubing the other tapers off stemlike for connection by means of an additional piece of rubber tubing to a negative air pressure pump

This apparatus is a slightly different adaptation of a principle that has long been employed in the treatment of tubotympanic adhesive processes There is no evidence to warrant the belief that greater success can be achieved with the Auriculator in treating such conditions than can be achieved with similar existing devices of the same general nature

Dr Stapler in his submitted discussion of the causes of deafmutism, claims that a great many cases of deafmutism are due to 'lymphoid tissue in the post-nasal space or to tonsils and adenoids blocking the lower ends of the eustachian tubes" It is the opinion of expert otologists, however, that even the most profound obstruction to sound conduction, such as that in which the stapes becomes fixed in the oval window by adhesive bands, can produce only a modicum of deafness

The Council on Physical Therapy declares the Auriculator inadmissible for inclusion in the list of devices for physical therapy which are acceptable (1) because no scientific evidence has been presented to warrant the claim that it can be used successfully in treating deafmutism, and (2) because the descriptive material submitted with the device contains unscientific and incorrect statements as to the causes of deafmutism

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Medical Ethics and Specialism—Naturally, according to the ethics of his profession, a physician will care for a sick man first and take care of his bill afterward This is all right for the sick man and for humanity, but it is bad for the community and bad for the physician and in the end bad for the sick man Such a vicious circle naturally leads a competent man to abandon the field of family practice for that of the better cared for but only 50 per cent, as frequently necessary, 'specialist"—McNeill, S J *Illinois M J* **53** 147 (Feb) 1928

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[24] Petroff S A Am Rev Tuberc **5** 656 (Oct) 1921

[25] Smith M I J Pharmacol & Exper Therap **20** 419 (Jan) 1923

[26] John H Biochem Ztschr **155** 159 160 1925 Chem Abstracts **19** 2985 1925

[27] Meleney, F L and Zau Z D Action of Acriflavines on Blood and Certain Tissues of Rabbits J A M A **84** 337 (Jan 31) 1925

[28] Smith H P The Fate of Intravenously Injected Brilliant Vital Red Bull Johns Hopkins Hosp **36** 325 (May) 1925

[29] Von Mollendorff W Vitale Farbund an tierischen Zellen Ergebn d Physiol **18** 141 1920

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SATURDAY MARCH 10, 1928

LAUGHTER AND HEALTH

Dr James J Walsh, eminent as a medical historian, has written a sermon on the old saying "Laugh and grow fat" In his book[1] the genial doctor attempts to establish laughter as a major item in preventive medicine There are chapters concerning the effects of laughter on all the different organs of the body as well as on the mind and on the practice of surgery The main theme in all these chapters is that laughter stimulates or promotes increased activity of all the organs enumerated by increased movements of the diaphragm Thus, Dr Walsh assumes that movements of the diaphragm augment the activity of the liver and of the pancreas both in its internal and in its external secretions, that it augments the motility of the entire alimentary tract so that we may laugh away constipation, and, more curious still that increased movement of the diaphragm in laughter increases the hormone output of the suprarenals, the thyroid and the parathyroids! In two or three places in the book the author recognizes that the cheerful mental state attendant on laughter, or at least synchronous with laughter may be of some value in accounting for the favorable effects of laughter, but after each such admission he returns to his essential theme, endeavoring to explain the therapy of laughter on the basis of mechanical stimulation on virtually every organ in the chest and in the abdomen by the mechanical movements of the diaphragm in laughter It is in the endeavor to explain the benefits of laughter on that basis that the author is led to many absurdities and unfounded statements in his physiologic reasoning

According to Dr Walsh, man is the only animal that laughs He discounts "the horse laugh" and the "laughing hyena," but he forgets that, so far as movements of the diaphragm are concerned and whatever be the physiologic consequences attendant on such diaphragm movements that is, changes in pressure in the chest greater volume of tidal air in the lungs and greater movements of the abdominal viscera, the same effects are produced in the mooing of the cow, the howling of the dog, the braying of the donkey, and the cough and the cry of the human species On this basis, even the sneeze is not to be sneezed at on the health program There is, indeed, a kernel of truth in the author's theme—laugh and grow fat—not that it is healthy to grow fat but that it is conducive for continued health to be of a cheerful disposition and thus avoid the injurious physiologic sequels of the opposite mental states It is beyond the range of sound information to assert that mechanical movements of the diaphragm stimulate the thyroid, the parathyroid, the thymus, the liver, the pancreas or the suprarenal glands There is no evidence to this effect and the probabilities are to the contrary If Dr Walsh is right in his interpretation of the health factors in laughter as being the mechanical movements of the internal organs, the passing of the old flivver is a public health calamity Indeed, one might confidently anticipate that the curve of human ills will ascend as a consequence of the loss of this efficient and almost universal vibrator

In the chapter on laughter and the lungs, Dr Walsh assumes that laughter increases the tidal air (that is, the volume of air inspired and expired in one breathing cycle), that the higher concentration of oxygen thus produced in the lungs leads to increased oxygen content of the blood, which in turn increases the activity of every tissue in the body This gives the imprint of medical authority on the old but erroneous notion that the oxidation processes in the body of a normal person are increased by increasing the oxygen percentage in the inspired air The combustion processes in the body are, indeed, governed by quite other factors

What a pity that a book written apparently in all seriousness for the instruction of laymen should so abound in errors of facts! It says, for example

> These ductless glands are all affected by each other's secretions, so that whatever the vibratory massage set up by laughter may accomplish, it is sure to affect the whole chain of glands
>
> Laughter by its action through the circulation, and because of the gentle massage of ductless glands that is associated with it, promises to use nature's own methods of stimulating the ductless glands, and thus increasing their natural secretion
>
> The massaging of the pancreas by laughter, especially after meals, undoubtedly leads to the manufacture of more of its external secretion

As a matter of fact, the mechanical massage of the pancreas is one of the surest ways to stop the external secretion of the pancreas The book says that diabetes is on the increase in recent years and that this is due to diminution of laughter and the consequent loss of the mechanical massage by the moving diaphragm! It is urged that "the old-fashioned, popular idea of a sluggish liver probably has a definite scientific significance" The remedy is at hand, massage the liver by laughter The author has managed, indeed, to introduce much erroneous matter on the composition and physiologic significance of bile in his chapter on the liver When he says "Laughter constitutes an excellent method of massaging the large intestine without the necessity for any apparatus, or any auxiliaries," he seems to discourage the importance of diet in the control of this part as well as other parts of the alimentary canal, and in order to be sure that his reader does not miss his point about the large bowel he comes back with the statement that "it [the large bowel] can be stimulated by means of laughter more simply and surely than in any other way The laugh cure will beat all the new fangled methods of healing" The book says that "constipated people are not prone to laughter nearly so much as others" This is also probably true of people with diarrhea

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[1] Walsh J J Laughter and Health New York D Appleton & Co 1928

Dr Walsh does not appear to see the dilemma he places himself in by denying the existence of laughter in all animals below man and then insisting that laughter is a necessary element in health as a result of the mechanical action of the diaphragm On such a basis, how does he account for excellent health in the nonlaughing animals? Laughter is an extreme expression of a cheerful or happy frame of mind Such a frame of mind is beneficial to many body processes chiefly by preventing the opposite state of mind from interfering with them Laughter and good health are therefore the sequels of the same central state so far as the relation holds true It is unfortunate that the gospel of good cheer should be bolstered up by so much erroneous physiology and loose logic It would be a terrible spectacle if continuous laughter were to become a new health fad Already the number of grinning simpletons is appalling Let us have laughter—but not the sadness of a forced laugh There are more than enough truly amusing sights and incidents in the great farce known as modern civilization to give adequate stimulus for all the real laughter that may be necessary or desirable

BARBITAL ADDICTION

Many conditions legitimately call for the medical use of depressants of the nervous system The relief of pain is doubtless the most prominent illustration, though it is not the only occasion for the therapeutic administration of potent drugs of this class Cerebral excitation, sleeplessness and certain disconcerting psychic states often require some counteracting influence in the interest of bodily welfare and avoidance of intense distress scarcely less tolerable than the pains of physical injury Mankind has long made use of agents that would conduce to relief Vicious habits have thereby become established when the administration was not supervised by an intelligent adviser such as the physician should be

Alcohol and opium were formerly our principal hypnotics,[1] but they have been superseded largely by others In this country the force of law as well as a modified public sentiment has served to hasten the change, which is one of substitution rather than omission The catalogue of the newer hypnotics is a formidable list of synthetic chemical compounds, some of them exhibiting striking usefulness Meanwhile the layman has not been slow to discover the potency of the novelties and has often applied them to his desires inadvisedly New drug addictions have thus arisen and brought fresh problems for solution to the innocent physician When a single practitioner can report, as Work[2] has done, a hundred cases of acute poisoning or chronic addiction with one of these drugs, the situation is evidently one that challenges serious attention

Barbital, introduced under the trade name of veronal, has a tremendous and increasing lay popularity for self administration Its habit-forming propensities are sufficiently well recognized to merit the special designation of barbitalism or veronalism The opportunity is readily created Finding himself unable to react adequately to environmental conditions, as Work points out, the man who is either constitutionally or acutely below the standard dulls his sensorium with barbital, just as other drugs are used as a refuge from circumstance It should be remembered, he adds, that a host of proprietary hypnotics now on the market are of the same chemical series as barbital and may induce in greater or less degree the same results Poisoning resulting from barbital taken in conjunction with one of its congeners is more difficult of treatment and offers a poorer prognosis According to Work, addiction to barbital does not stop with the production of moderate euphoria Judgment, orientation as to time, and insight are probably the most severely harmed of the psychic faculties and are the last to clear up in convalescence Cases of residual defect fall almost entirely in this class The mentality in this condition precludes complicated criminality or conspiracy, and the appearance does not inspire confidence sufficient for the consummation of any but the crudest frauds or clumsy impositions on friends Ethical offenses, as against decency, and minor frauds, such as issuing fundless checks and forgery of an unskilful type, are well within the possibilities Carelessness may well result in acts of an apparently criminal complexion The paranoid reactions are usually too fleeting to endanger any one, but the dulled sensorium may lead to quasicriminal complaisance with the schemes of others These are indeed disturbing pictures for the contemplation of nations that are endeavoring with great zeal to free themselves from the more familiar types of drug addiction The "safe" hypnotics may become menacing to the public welfare

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[1] Pharmacology of Useful Drugs Chicago American Medical Association

[2] Work Philip Barbital (Veronal) Addiction Arch Neurol & Psychiat **19** 324 (Feb) 1928

THE CONTENT OF VITAMINS A AND B IN COD LIVER OIL

Accumulated evidence seems to have established the fact that vitamin A is not identical with the antirachitic factor, as a consequence, vitamin D has been postulated The recently published work of Clare and Soames[1] now shows that there is no parallelism or interrelationship between the content of these factors (antiophthalmic and antirachitic) in substances, such as cod liver oil which contain both These investigators found that some oils, which were rich in vitamin A were poor in vitamin D and that others rich in vitamin D were poor in vitamin A, in other words, that no correlation existed between the content of the two vitamins in the oils of their series The importance of this matter may be appreciated when it is pointed out that some commercial firms whose products have satisfactory vitamin A content as measured by the pharmacopeial test for the antiophthalmic vitamin claim, ipso facto, a satisfactory content of the antirachitic factor (vitamin D), for which no test or standard is provided by the pharmacopeia

The Council on Pharmacy and Chemistry has previously attacked this fallacy In the new section on Vitamin Foods to appear in the chapter on Medicinal Foods in New and Nonofficial Remedies, 1928 (now on the press), our present knowledge on this subject is briefly presented Though various more or less satisfactory methods now exist, the Council states that it does not feel justified in requiring any specific test or standard of antirachitic potency In this situation the Council announces the policy of encouraging manufacturers to adopt and publish such methods of testing as will enable them to guarantee a vitamin D potency for their products For accepted or submitted products the Council permits no claim of vitamin potency unless it is backed up by adequate tests for the kind of potency claimed All accepted products must have according to the Council's statement, a vitamin A potency of at least 400 units per gram when tested by the pharmacopeial method For vitamin D potency a specific standard is not required, although, as has been pointed out, the manufacturer must specify adequate tests when claims of antirachitic potency are made or implied

The widespread publicity currently and deservedly given to cod liver oil and cod liver oil preparations as vitamin foods for therapeutic use makes it important not only that physicians be informed concerning their merits but also that they be able to discriminate between a product prepared and marketed with scientific provision for determination of vitamin potency (of whichever kind claimed) and one which is not so prepared and marketed

Current Comment

THE FREQUENCY OF BOTULISM

Elsewhere in this issue is a report on the frequency of botulism, with a summary of outbreaks for 1927 A study of the data now available again points out the total inadequacy of some of the heat processes that are being used in home canning, particularly in western states In the Montana outbreak due to home canned corn in the series of 1927, almost an entire family was blotted out Numerous other glass jars of home-canned vegetables in this home were proved spoiled and toxic or contaminated with toxic strains of *B botulinus* The interesting thing in this outbreak was the fact that the corn was served in soup and apparently heated The point has often been stressed particularly for home canners in western states who may use insufficient heat processes without considering altitude, that vegetables, meat and fish so canned must be boiled thoroughly before being consumed and after being removed from the can or glass jar In this connection, one may well censure Farmers' Bulletin 1471 of the United States Department of Agriculture, which does not contain an adequate warning against canning nonacid products at the boiling point of water, but implies that that temperature may be used when a proper pressure method is not available In the light of these outbreaks, it may not be unwise to suggest that state boards of health, particularly those of western states, investigate and attempt to regulate the processes being used in the home canning of nonacid foods in their respective communities Perhaps the most encouraging sign in this report is the absence of any cases attributed to commercially canned food In fact, none have been reported since early in 1925, practically a three year period For a number of years the commercial canning industry has realized its responsibility to the public by performing and supporting research As a result, sterilizing processes have been carefully standardized, and apparently this industry is being safely conducted from the standpoint of public health

THE RESPIRATORY METABOLISM OF MUSCLE

The respiratory quotient is an expression of the relation between the oxygen consumed and the carbon dioxide produced within a given period by the whole organism or any part of it that may be susceptible of independent investigation The relationship is generally regarded as a reliable index of the foodstuffs that are being transformed in the liberation of energy The respiratory quotient for the conversion of carbohydrates is unity, for the fats and proteins it is lower than one There are many indications from the respiratory quotients observed that, in the body as a whole, any of the proximate principles may become the source of energy The muscles form about two fifths of the soft tissues of the body by weight, so that the contractile tissues may naturally be assumed to play an influential part in determining the nature of the metabolic transformations incident to life The studies published in particular by Meyerhof[1] in recent years have given indication that the respiratory quotient of resting muscle is unity These conclusions are based on investigation of isolated tissues They are in harmony with the commonly expressed view that the muscle machine itself consists doubtless of protein, while carbohydrate represents the fuel by the burning of which the machine is actuated[2] They are at variance, however, with the evidence from the living organism as a whole Consequently Himwich and Castle[3] have undertaken the redetermination of the respiratory quotient of isolated muscle which is still part of the body and subject to its regulations Their research indicates that, in contrast to former in vitro results, the muscle in vivo apparently has a respiratory quotient not of unity but more nearly that of the rest of the body Perhaps this is to be explained on the assumption that the presence of one or more of the viscera or their secretions is necessary for normal metabolism As Himwich and Castle point out, the theory of an obligative combustion of carbohydrate becomes necessary only when muscle is found to have a respiratory quotient of unity In the light of the present data, they add, it is no longer necessary to consider carbohydrate the sole available foodstuff for resting muscle The experiments do not exclude a transformation of fat to carbohydrate but they make it probable that if such change does occur it takes place in the muscles and in the body as a whole in the same relative proportions

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[1] Clare J L L and Soames K M The Relative Content of the Fat Soluble Vitamins A and D in a Series of Cod Liver Oils Lancet 1 150 (Jan 21) 1928

THE SUPRARENALS AND BLOOD PRESSURE

Knowledge of the suprarenal functions is yearly becoming better defined From the observations that, on the one hand, the extirpation of the suprarenal glands invariably leads to death, thus indicating the indispensability of these organs for life, and, on the other, that physiologically potent substances can be extracted from suprarenal tissue, the details of the possibilities involved are gradually being disclosed Foremost in the differentiation of the experimental evidence is the demonstration that from a functional standpoint the cortical and medullary portions of the suprarenals must be kept distinct As far as survival is concerned, it is the cortex rather than the medulla that challenges attention Hence in "replacement" therapy the peripheral layers of glandular material offer the chief prospect of usefulness, as has already been pointed out in The Journal For the suprarenal medulla there remains the capacity of producing and secreting the powerful hormone epinephrine, for which some worth-while physiologic importance is naturally to be expected At present, interest centers primarily in the alleged "emergency" function so vigorously championed by Cannon and the Harvard school of physiologists[4] In time of stress the secretion of epinephrine may be of benefit in that it promotes the response of the sympathetic nervous system giving an acceleration of the heart rate, a greater flow of blood to the vital organs, and an increased mobilization of sugar for contractile and calorigenic uses The earlier belief that, in view of its readily demonstrable pressor effects, epinephrine normally serves to maintain the blood pressure at a proper level is being abandoned The latest attack on the once attractive hypothesis is by Rogoff and Dominguez[5] of Western Reserve University They have been able to record arterial pressure without the aid of anesthetics in suprarenalectomized animals which survive the extirpation operation for some time During the residual period of good health, the loss of the glands is not attended with any significant alteration of blood pressure Decline of the arterial tension occurs as a terminal event, associated with other symptoms that have been shown to occur in dogs dying of suprarenal insufficiency The Cleveland physiologists assume that suppressed epinephrine secretion has little or nothing to do with the terminal fall of pressure, and that it is associated with the phenomena that result from loss of cortical suprarenal function

THE CHOROID PLEXUS AND THE CEREBROSPINAL FLUID

It is characteristic of true secretory structures such as are found in the salivary, gastric and pancreatic glands, for example, that the transport of fluid proceeds through them in only one direction Changes in the composition of the blood, which in ultimate analysis is the source of the secretion, may somewhat alter the character of the latter, particularly in a quantitative way, secretion may even be inhibited, but reversal of the flow is essentially out of the question These "principles" of true secretory function may accordingly be applied in judging whether a fluid in the organism arises through glandular or cellular secretion rather than the less complex movement of fluids through membranes according to physicochemical laws Until recently it has been debated whether the cerebrospinal fluid is a secretion produced by the choroid plexus rather than the product of osmotic forces Forbes, Fremont-Smith and Wolff[6] have attempted to study the question anew by introducing pigment granules into the subarachnoid space and then injecting hypertonic salt solutions into the circulation Under such conditions the pigment was soon found within the vessels of the choroid plexus This indicates, as the investigators point out, that the direction of flow of cerebrospinal fluid through the choroid plexus may be reversed by increasing the osmotic pressure of the blood Supposing the choroid plexus to be purely a secreting gland, the mechanism of such a reversal of flow would be difficult to understand They therefore aver that their observations add to the accumulating evidence that the choroid plexus may be regarded as a semipermeable membrane, and the cerebrospinal fluid as a true dialysate

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[1] Meyerhof O Arch f d ges Physiol **182** 284, 1920 Meyerhof O and Himwich, H E Ibid **205** 415 1924

[2] Meyerhof O Chemical Dynamics of Life Phenomena, Philadelphia J B Lippincott Company 1924

[3] Himwich, H E and Castle W B Studies in the Metabolism of Muscle I The Respiratory Quotient of Resting Muscle Am J Physiol **83** 92 (Dec) 1927

[4] Suprarenal Functions, editorial J A M A **88** 1568 (May 14) 1927

[5] Rogoff J M and Dominguez R Blood Pressure Following Adrenalectomy, Am J Physiol **83** 84 (Dec) 1927

[6] Forbes, H S Fremont Smith Frank and Wolff H G Resorption of Cerebrospinal Fluid Through the Choroid Plexus Arch Neurol & Psychiat **19** 73 (Jan) 1928

Association News

THE MINNEAPOLIS SESSION

Scientific Exhibit

The Committee on Scientific Exhibit calls attention to the fact that all applications for the Scientific Exhibit must be in the hands of the director before March 20 Any who desire an application blank may obtain it by sending a request addressed to Director Scientific Exhibit, American Medical Association 535 North Dearborn Street, Chicago From the applications received so far, the exhibit at the Minneapolis Session promises to be one of the most interesting in the history of the Association

ANNUAL CONGRESS ON MEDICAL EDUCATION, MEDICAL LICENSURE AND HOSPITALS

Twenty Fourth Annual Meeting held in Chicago Feb 6 7 and 8 1928

Dr Arthur Dean Bevan, Rush Medical College, Chicago, in the Chair

COUNCIL ON MEDICAL EDUCATION AND HOSPITALS

February 6—Morning

Cooperation in Medical Education and Medical Service

Dr Arthur Dean Bevan Chicago This address will be published in The Journal

Medical Education in Great Britain and Ireland

Sir Norman Walker, Edinburgh This paper will be published in The Journal

DISCUSSION

Dr William S Thayer, Baltimore American medicine is the direct descendant of the University of Edinburgh A look back into the history of our first great medical school, the University of Pennsylvania, reveals to us that almost all its founders were graduates of Edinburgh The same is true in New York and in many other parts of the country American medicine is the child of the University of Edinburgh As Sir Norman spoke, I could not help thinking of the charming way in which almost unexpectedly, while studying the history of Bright last summer, I was brought back to the solid manner in which the Edinburgh clinicians were working in Bright's day When Bright first published his researches on diseases of the kidney he was greeted in other parts of the United Kingdom by a somewhat superior, rather patronizing sort of criticism delivered ex cathedra In Edinburgh after a year or two there appeared one or two studies dealing entirely with observations and the study of those observations which supported him entirely It is one of the most striking things that can be imagined One word with regard to my feelings as to the teaching of medicine in America today It is about fifteen years since an effort was begun to improve the teaching of the fundamental branches of medicine by establishing, so to speak, a kernel of university professors in a school of medicine That has been introduced into various schools It has led to very wide misunderstanding by the public, general and medical, for no one who was interested in this experiment which has proved, I think, a great advance, certainly no medical men had the slightest idea that the kernel of university professors must do all the teaching in the schools They never dreamed of such a thing Since that great beginning of a great reform in medicine, there has been the most active discussing going on, the liveliest criticism I can only say that I am perfectly sure that the results of medical teaching in those schools and in the other schools are far better than they were before the beginning of these changes

The Soul of the Clinic

Dr Francis W Peabody Boston This paper will be published in The Journal

Developing a Medical Center

Mr Robert E Vinson, Cleveland It seems to me rather fitting that the chairman of this body in his opening address should have called attention to the great importance of securing the cooperation of the general public, of the university, and of hospitals in the matter of the development of modern medical education because, after all, in our five to seven years of effort in this direction we have been passing through the interesting experience of bringing about the coordination of just those elements in the development of what we are now calling the medical center at Western Reserve University The medical school, of course, is the primary interest in this development But latterly it came to be seen that the school of dentistry was also a large feature in this development and that something had to be done in the direction of the development of nursing on a university basis very much along the same lines as had been taken already by the school of medicine and by the dental school Prior to the beginning of this development, every hospital which was connected with the university medical school maintained its own nurses' training school We were very fortunate in being able to secure the cooperation of virtually all the hospitals in the university group which maintained nurses' training schools in the adoption of a plan by which the training of nurses would be put in the university on the same basis as any other of the independent schools of the institution Consequently that led to the abolition of the individual training schools in the individual hospitals, bringing them all together into a university nurses' training school in which the hospitals would continue to cooperate by furnishing us the facilities for the practical training of the nurses and in which all of the scientific training of these young women would be turned over entirely to the university school In addition to these various elements in the university, there were the various hospitals which were connected, some of them more or less loosely, with the university organization When this plant is completed it will give us on the university campus all the agencies which have entered into this grouping arrangement which we worked out We also have control of the City Hospital The Cleveland Medical Library Association erected a new building to house its library on the university campus and joined our medical group We have also succeeded in bringing into the same grouping the Cleveland Museum of Natural History The problem of the development of the medical center, of course, lay in first of all getting before our community and before the trustees of the university the vision of the possibility of such a thing and then getting it before the trustees of all these various hospitals We were finally able, after some two years of work, to bring all four of these hospitals together into one hospital organization by creating a separate corporation which was to be an operating corporation, and leaving in existence all the other various boards of trustees as the owners of the hospital properties That idea has made a strong appeal to our people, it has made a strong appeal to the community fund agencies of the city of Cleveland, and year by year we have found that the centralization of the operation of these hospitals under one board has greatly added to the efficiency of the group as a whole One of the great problems, of course, that one has to face in connection with the development of a group like this is the financial problem It seemed to me that under no conceivable set of circumstances could this thing be worked out with an expenditure of less than about $30 000 000 To my intense amazement, that amount of money and more has already been raised and spent on this plan

An M D Degree Five Years After High School

Dr Wilburt C Davison Durham, N C The present standards of physicians can be maintained and in fact probably improved if preference in admission is given to carefully selected younger students who have intelligence and character, plus two years of college work, and the M D degree is given after the completion of three medical school years of forty-four weeks each At present, although 81 per cent of American medical schools require only two years of college work for admission preference is invariably given to candidates who have attended college for three or four years

Consequently at the present average age of graduation, 26 years, more than one year of hospital training is rarely obtained Since the high school of today is equivalent to the college of thirty-five years ago, when the college degree was first adopted as an entrance requirement, the keen student should be admitted after two college years of English and chemistry and one college year of physics and biology If the summer quarter is utilized, the present four medical school years of thirty-three weeks each can be condensed to three years of forty four weeks each The student will be one year younger at graduation and will have an additional year for hospital and other training He will be better prepared, for he will not have lost a fortnight or a month in October of each year getting back into the intellectual stride which had been his in the preceding June, and he will see the clinical material peculiar to the summer months He will still have adequate vacations totaling eight weeks A flexible curriculum can be arranged in which repetition of preclinical courses will be unnecessary Clinical subjects should be repeated each quarter in order to utilize all of the clinical material and to have small groups of students The size of the average staff and budget need not be increased, for instead of all of the members taking their vacations at the same time they could arrange the teaching and decide among themselves the quarter during which each instructor would be away The most important factor in the success of this plan is, to quote the late Mr James B Duke "that great care and discrimination be exercised in admitting as students only those whose previous record shows a character, determination and application evincing a wholesome and real ambition for life"

DISCUSSION

Dr. C C Bass, New Orleans Tulane University Medical School is located farther south, I believe, than any of the other schools of the country, and the climate is perhaps warmer, or at least is as warm longer than perhaps the climate at any other place The faculty has unanimously adopted the quarterly system to go into effect as soon as it can secure the permission of the board of administrators The board of administrators is now seriously considering it, and it is expected that the quarterly system, the full four quarters as indicated by Dr Davison, will go into effect during the present calendar year

Dr Jabez N Jackson, Kansas City, Mo As the temporary head of the American Medical Association, it gives me great pleasure to greet you In the original declaration, one of the chief purposes, one of the real reasons, for the existence of the American Medical Association was to facilitate medical education Through the American Medical Association and as a result of its agencies, rapid strides have come in medical education within the last few years I was a member of the House of Delegates from my state at the meeting at New Orleans when this council was created and any of you who realize the chaos in medical education then as contrasted with the highly organized condition of affairs today will realize that the Council on Medical Education and Hospitals has accomplished wonders During the two years since the time I became President-Elect, it has been my privilege to visit various state and local medical societies, and I have been made aware of the fact that there probably is no subject which attracts much more general interest on the part of the profession than does the subject of medical education Educational problems always lead to differences of opinion, to criticisms and to praise I should like to remark but one thing as a suggestion of what has come to me from contact with medical men throughout the country, and that is a feeling of fear on the part of the general practitioner that medical education is lacking a conception of its fundamental obligation or its obligation to the fundamental medical profession We must realize that probably 90 per cent of the men who study medicine do so with the object of practicing medicine afterward and that a very considerable proportion of that number will go into practice under conditions and surroundings vastly different from those in which they are educated.

Perhaps the most masterly address ever delivered by a president of the American Medical Association was that given by Dr W W Keene at the Atlantic City session somewhat more than twenty-five years ago His plea was for the endowment of medical schools and hospitals and when we realize that at that time there practically was no endowed medical school, that there were very few endowed hospitals and practically no endowed laboratories and that his plea has in this short length of time brought about the results that we see, we must admit that marvels have been accomplished

I would only suggest to you as educators who naturally know more about your own business than a physician who practices surgery in a small western community, keep your feet on the ground and remember that after all you are going to teach the ordinary doctor and you must give him an education that he can use fundamentally with the resources God has given him He may not always have the benefits of these hospitals and these laboratories and these rich allies and aids We all admit the value of such institutions, and yet many will have to dispense with them after they get out Fundamental education should train a man to use his own resources and to be a competent physician with no other aids

FEBRUARY 6—AFTERNOON

Medical Research, Medical Department of the Army

Dr M W Ireland Washington, D C The activities of the Army Medical School are somewhat broad in scope embracing teaching research routine laboratory work and the manufacture of certain biologic products Two regular graduate courses are conducted each year, one for officers just entering the service and the other for officers of from five to ten years service In addition, courses of instruction are conducted for nurses dietitians and enlisted technicians The school manufactures and distributes the typhoid-paratyphoid vaccine used by the army, the navy and certain other departments of the government, and prepares and distributes diagnostic serums antigens and certain other biologic products used as a routine throughout the army Some conception of the magnitude of this activity may be gained when it is realized that between January, 1917 and November, 1918, approximately 17 000,000 cc of typhoid-paratyphoid vaccine was prepared and distributed Various phases of the unsolved problems relating to amebic dysentery are under investigation at the Army Medical School and very satisfactory progress is being made toward their solution A simple and satisfactory liquid medium for the cultivation of the organism causing dysentery (*Endameba histolytica*) has been evolved It also has been demonstrated that antigens made up of alcoholic extracts of cultures of *E histolytica* contain hemolytic, cytolytic and complement binding substances These extracts are now being used at the school in carrying out complement fixation tests as an aid in the diagnosis of amebic dysentery and appear to be highly specific During the past two years the precipitation test (Kahn) as an aid in the diagnosis of syphilis has been subjected to rather extensive trial at many of our large general hospitals under the general supervision of the Army Medical School The precipitation test (Kahn) gives positive reactions at an earlier stage in syphilitic infections than does the complement fixation test as standardized for use in the army The same statement of fact also holds good for latent syphilitic infections and cases under treatment The precipitation test has the disadvantage of giving a considerably higher percentage of so-called false positives than does the complement fixation test as applied in our laboratories It is doubtful if many are aware of the fact that the method of sterilizing water with anhydrous liquid chlorine now so universally applied in water supply systems throughout this country was worked out originally by an officer of the medical corps Investigations were undertaken by the medical department research board on dengue fever, beriberi, rinderpest and surra Many other investigations have been undertaken and completed or are now under way which are equally deserving of brief review did time permit

Medical Research in the United States Navy

Dr E R Stitt, Washington, D C The medical research problems of the navy are largely concerned with the standardization of material, the problems of warfare, the application of physical laws to abnormal living conditions, and public health The naval medical supply depot, Brooklyn, inspects and tests, by methods devised there, all material purchased by the medical department of the navy Outstanding in recent years have been new methods of testing clinical thermometers and roentgen-ray apparatus Chemical warfare has brought its problems to the navy A naval medical officer is detailed for duty at Edgewood Arsenal as a member of the medical research division and his studies have been productive of important result Among the problems studied have been the treatment of phosphorus burns, the effects of burned smokeless powder, treatment of carbon monoxide poisoning the toxicity and inflammability of refrigerants, and other problems of a confidential nature Research designed to determine the best means of protection against toxic gases is also being conducted Submarines, deep diving and aviation introduce problems of the greatest importance The reduction of the carbon dioxide content of the air on submarines, means of rapidly decompressing divers without producing bends, ways to determine the qualifications of applicants for training in aviation and the hygiene of aviation are all receiving close study and are near solution Respiratory problems arise as the result of flying at high altitudes and special study of these is being made

Our island possessions Guam Samoa and the Virgin Islands supply natural laboratories for original research in public health work, particularly in connection with the prevention and treatment of tropical diseases Already results have been marvelous and these islands are being rapidly rid of those scourges which formerly made them the graveyards of the white race Pellagra gangosa, yaws, helminthiasis and typhoid no longer are the cause of alarm they once were and are being conquered Haiti stands out as an example of the good accomplished by naval medical research The establishment of a modern medical school hospitals and clinics the introduction of modern sanitation, and the improvement in the economic status of the natives are all in large part, the result of medical research It was in Haiti, too, that studies which seem to show the identity of gangosa, yaws and syphilis were made by naval medical officers

A most important study has been conducted by the bureau of medicine and surgery in connection with food poisoning For the past four years every report of food poisoning in the navy has been given close epidemiologic study, and the results have been far reaching

Medical Research in the Hygienic Laboratory

Dr Hugh S Cumming Washington, D C Under broad authorization of federal law researches of the most fundamental nature as well as those having for their object immediately practical medical or public health application are carried on Work is carried on not only in Washington but also in strategically located field stations An advisory board made up of some of the most distinguished members of the profession is available for consultation and advice

Studies have shown that pellagra is a dietary deficiency disease, the complete prevention of which is readily accomplished by a suitable diet Tularemia, first studied by the Public Health Service as an interesting pathologic counterpart of bubonic plague in rodents, has been shown to be fairly common in man, the infection coming from rabbits either through direct handling of infected animals or through the medium of biting flies or ticks contaminated from feeding on rabbits A method of controlling Rocky Mountain spotted fever by means of a vaccine is being worked out in the field, after laboratory demonstration of the success of the method Undulant (Malta) fever has been shown to be not rare and the source of infection not infrequently cattle suffering from contagious abortion

Typhus fever as it occurs in the South where it exhibits peculiar epidemiologic features is being studied Tetanus following vaccination has been found to follow large, primary vaccinations only, and to occur almost exclusively when shields or dressings are employed Amebiasis in its various aspects, trematode infestation in relation to immigration, and zoological nomenclature are among the subjects dealt with by the zoological experts

Studies in chemotherapy, with special reference to the mechanism of the therapeutic action of arsenical compounds, methods of assay of organotherapeutic preparations, and surgical shock are under study by the pharmacologic staff

Methods of purification of water supplies, study of reaction velocities, and the oxidation-reduction phenomenon in relation to living matter are among the subjects under investigation in the division of chemistry

The routine work of the laboratory is confined largely to the official standardization and control of serums, vaccines and similar products, also arsenicals of the arsphenamine group Federal license for preparations of this group is not to be regarded as official endorsement of the particular material

The Revision of the Standard Nomenclature of Diseases and Pathologic Conditions, Injuries and Poisonings

Dr William H Davis, Washington, D C "For perfecting the statistical registration of diseases, with a view to the discovery of statistical truths concerning their history, nature and phenomena, the want of a generally recognized nomenclature of diseases has long been felt as an indispensable condition Another main use of the statistical registration of diseases on a wide scale is that it must tend to throw light on the causes of disease, many of which causes, when duly recognized, may be capable of prevention, removal or diminution" These words have been taken from the preface of the first edition in 1869 of the Nomenclature of Diseases by the Royal College of Physicians of London A thought from the preface of the Standard Nomenclature of Diseases and Pathological Conditions, Injuries and Poisonings for the United States (1919) will also bear repetition 'Botanists would have the greatest difficulty in discussing flowers if they did not use one name for each flower, and likewise zoologists in their discussions of animals To make possible medical discussion and to facilitate the interchange of ideas, therefore, it is necessary that we all speak the same medical language, that we all call the same diseases by the same names"

Dreams of an international medical nomenclature have existed at various times but to date have proved to be only dreams No one can predict what will be possible centuries hence, but it stands to reason that, before countries can reach a satisfactory basis for an international medical nomenclature, each country must first have a satisfactory medical nomenclature of its own

"In 1918, at a meeting of representatives of the Army, the Navy, the Public Health Service, the War Risk Insurance and the Council of National Defense, the possibility and desirability of creating and adopting a standard medical nomenclature were discussed' The Council of National Defense, confronted with other pressing problems, found that it could not also continue the preparation of a medical nomenclature, and a recommendation was made that the Bureau of the Census undertake the work This recommendation was indorsed by the surgeon generals of the army, the navy and the Public Health Service The President of the United States allotted funds to the Bureau of the Census for the preparation of the nomenclature as a war measure To use these funds it was necessary to complete the work before July 1, 1919, and the date of the letter of transmittal of the Standard Nomenclature was June 24, 1919 The first edition was a rush job which had to be completed in a few months, but at present there is no war emergency and there is no necessity of undue speed Sufficient time should be taken to evolve a satisfactory edition

It is not expected that the Revised Standard Nomenclature without any alterations will prove to be just the guide desired by each branch of the medical service—army, navy, United States Public Health Service, Veterans' Bureau, state hospitals, private hospitals, groups of physicians, insurance companies, individual physicians and others, but it is hoped that the Revised Standard Nomenclature will be found a useful base on which to build any special nomenclatures needed by these various medical groups When this second edition will be published I cannot say A forecaster has a difficult task no matter whether he forecasts weather conditions, political conditions or simply the date when a given report will be received from the press

In this revised edition, as in the first edition, an earnest appeal will be made for free criticisms which will help to make any future edition of greater value, but I wish to urge particularly that every physician interested forward his suggestions now to the Census Bureau in order to make certain a worth while second edition

February 7—Morning

Modern Preceptorships The Value of Associate Teaching Centers in Clinical Teaching

Dr C R Bardeen, Madison, Wis This paper will be published in The Journal.

DISCUSSION

Dr Karl Doege, Marshfield, Wis Though the value to the apprentice of this sort of teaching is the main point under discussion, the apprentice by no means is the only one who is benefited Preceptorial teaching in our group led to a hasty inventory of what we still possessed of our stock of knowledge Unless you have gone over your stock regularly as good merchants do, you would probably be surprised at the incompleteness of it The general effect of the advent of the students on our preceptorial staff was to stimulate closer study and observation of our cases and more careful scrutiny of the therapeutic measures and of the problems of comfort for the patients Our diagnoses became more exact and our talk became more guarded, giving an opinion only after we had thought two or three times rather than once We all became better physicians The questions the apprentice, an earnest seeker after medical knowledge, can ask are proverbially too many for even the wise to answer In consequence, we learned to say "I don't know," gracefully and unblushingly If the question involved a matter of knowledge that could be gotten out of the medical literature, we invariably coupled the negative reply with a request to the student to read up and find out and let us know about it Thus the apprentice often teaches the preceptor With eight or ten of such associate teaching centers scattered throughout the state, each of which is being markedly benefited by its effort at preceptorial teaching, great value will come to all the physicians in the respective territory and must eventually lead to the elevation of the standard of the entire medical profession This is a result that the state university cannot ignore and must be recognized as not an unimportant by-product of the rehabilitation of the preceptor and apprenticeship plan of teaching

The apprentices come to us surprisingly well grounded in the fundamentals of the medical sciences, but with a lack of ability and skill to draw on their fund of knowledge promptly and judiciously It is here that the example of his preceptor is of the greatest importance A study of his method of approaching the patient, his interested questioning into the history, his scientific but living knowledge, his sympathy, his understanding of the patient's worried mentality, his selection of such forms of treatments and nursing as are in accord with the patient's social position and financial ability, for the first time perhaps gives the apprentice an insight into the many problems the general practitioner has to deal with and gives him an inkling of what is meant by the art of medicine

The science of medicine is taught in the university, and the skill and practice of it in the institution, but the art of medicine can be acquired only in general practice If it should prove possible to develop clinical teachers out of these preceptors, what objection could there be to extending the benefit of such experience and ability to the profession in general, to combine undergraduate apprenticeship instruction with postgraduate fellowship meetings?

De-Departmentalizing of Clinical Medicine

Dr J S Evans, Madison, Wis Specialism in teaching leads to organized and systematic knowledge of an individual specialty, but without adequate attention to the correlation and application of these individual subjects to one another or to the problem as a whole Coordination in the teaching of medicine may be accomplished by one of two methods First, by correlating parallel courses, second, by a single combined course in medicine and surgery with inclusion of specialties in part or as a whole The latter is easier of administration than the former Such a course established at the University of Wisconsin is based on the principle that the teaching of the practical application of knowledge acquired in the preclinical years should be in terms of the patient, either real or hypothetic, rather than by an abstract and didactic consideration of disease entities and clinical syndromes It is built up round general medicine, with surgery and the various specialties introduced as is the case in actual practice The block plan is also incorporated Time assigned to specialties is devoted principally to the consideration of the special technic involved in each Assigned reading followed by conference is the method of instruction, didactic lectures being avoided as much as possible The plan permits concentration on the part of the student on carefully correlated reading assignments and appreciation on the part of the teacher of the methods of approach employed by his colleagues The course begins with lectures correlating the work of the preclinical years at the same time that the student is brought into immediate contact with the patient as a clinical clerk Environment and the diseases resulting therefrom are next considered Study of the secondary results of the environmental diseases follows The psychologic study of the patient (neuropsychiatry) is fitted in the course in block form The same plan is followed in the study of urology

The Use of the Outpatient Department in Undergraduate Medical Instruction

Dr Irving S Cutter Chicago This paper will be published in The Journal

Investigative Work and Library Service in a Nonteaching Hospital

Mr John E Ransom Toledo Ohio There is no nonteaching hospital Many hospitals have a definite and important part in the teaching of medical students interns, staff physicians, nurses, social workers dietitians and laboratory technicians Others teach only incidentally The Council on Medical Education and Hospitals lists 316 hospitals that are used by medical schools in the teaching of undergraduate medical students Certain other hospitals are used in graduate medical teaching but they constitute a much less well defined group There are 578 hospitals approved by the Council for intern training To this number may be added 270 approved for residence in specialties There are nurse training schools in 2,155 hospitals These classifications are not exclusive, one of the other Thus it may be seen that of the 7,000 or more hospitals in the United States, perhaps a third have some part in the education of either medical students or nurses But for the purpose of our discussion we may well accept the narrower definition of a teaching hospital as one that is used by a medical school in undergraduate medical teaching Of these, as already noted, there are 316

It has become a well established principle in the hospital world that, though the primary function of a hospital is and at all times must be the rendering of adequate care to its patients, other functions are of importance and must be fulfilled if the institution is to live up to its opportunity and responsibility Practitioners of medicine in cities in which there are no medical schools or good medical libraries are considerably handicapped if they wish to keep abreast of the developments in the medical field and to improve their abilities and skill It is easy for them to become engrossed in the daily routine of their practice, to lose the habit of study, and to let the edge of their minds grow dull The hospitals in such cities can more easily than not become little more than boarding houses for the sick and, so far as their managements are concerned, find the chief exercise of their faculties in balancing their budgets

What, then must a nonteaching hospital have and do if it is to encourage investigative work on the part of its staff? One of the most essential things, if not the most essential is to secure a well trained full-time pathologist who is interested in investigative work and is willing and able to develop staff interest in such activity and to cooperate with those members of the staff who wish to engage in it He must furnish much of the inspiration, guidance and technical supervision of the work undertaken Another essential is a hospital administration that is sympathetic with such a program The board of trustees must believe it to be one of the functions of the hospital to help members of its staff to perfect themselves in both the science and the art of medicine and perhaps to add to the fund of knowledge concerning diseases and their prevention and cure It must have sufficient faith in the value of such endeavor on the part of the hospital to see to it that the funds necessary to carry it on are available Its faith must be strong enough to be able to prevent foolish sentimentality about the use of laboratory animals from hampering the work The superintendent of the hospital must have a degree of generosity in providing essential space, time, equipment materials and service A more than passive interest on his part will help considerably Such a program can hardly be inaugurated unless a few of the members of the staff are actively interested to the extent of beginning such work even before all of the facilities for its successful accomplishment are fully developed

A brief account of our experience in attempting to inaugurate such a program may serve to indicate something of what may be accomplished Our hospital has 128 beds It is a private general hospital in a city of 300 000 a city which has no medical school It has an active staff of forty men The institution is 52 years old It is approved for intern training by the Council on Medical Education and Hospitals It is accredited by the American College of Surgeons and is an institutional member of the American Hospital Association It does a fair amount of charity but 80 per cent or more of its patients are the private patients of members of its staff and other resident physicians of the town

After considerable searching, we secured such a pathologist as I have already described Without great difficulty we found a room that could be used for animal surgery and a little money with which to equip it At a small expense we were able to provide quarters for dogs and other laboratory animals in one of our outbuildings The sheriff of the county has provided us with dogs, and the purchase of other animals has not been a great burden

Some of the staff were interested from the first and began work in collaboration with the pathologist During the first year, six members of the staff have carried on investigative work, others have asked for an opportunity as soon as they can be accommodated There have been two outstanding results Appreciating the facilities which the hospital provides and its willingness to do what it can to promote such work one of the members of our staff is undertaking a piece of work that will entail the full time service of a trained technician for at least a two year period He is providing the salary of this worker the hospital her maintenance, and our pathologist the supervision of her work This work was started February 1 of this year

The other result is this We were planning an entirely new hospital plant at the time this program was launched Space had already been allotted to the clinical laboratories, but so interested in the possibilities and values of investigative work had some of the influential members of our staff become that they convinced our board of trustees that special provision should be made for this work The outcome has been that an entire floor has been added to one of our proposed buildings (not the main hospital building) to house a research department The space that will be available will approximate 6 000 square feet, and it and the equipment will add between $40 000 and $50,000 to the building cost

We are developing a library of well selected books and journals The necessary funds come in part from our staff dues The superintendent s secretary devotes part of her time to the library Her services are available for any member of the staff in assembling material on any subject in which he may be interested We have had several instances during the past year in which this service has been of considerable value in relation to the care of patients in the hospital Exchange relationships established with other medical libraries have made available books for which there may be demand and which our library does not possess

This library program has called for special facilities in our proposed new plant Ample quarters have been provided for book stacks, periodical racks and a reading room Adjacent to the library will be the hospital museum It is our plan to make this something of much greater significance than the frequently found collection of anatomic abnormalities It will contain specimens accompanied by histories, photographs, microscopic sections and lantern slides It will be in charge of the medical librarian

(To be continued)

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST SUCH AS RELATE TO SOCIETY ACTIVITIES NEW HOSPITALS, EDUCATION, PUBLIC HEALTH ETC)

ARKANSAS

Society News — Dr William R Bathurst, Little Rock, president of the Southern Medical Association, who was guest of honor at the meeting of the Sebastian County Medical Society, January 10, was presented with a traveling bag on behalf of the county society ——Drs Arthur F Hoge, Fort Worth, addressed the Benton County Medical Society, Rogers, January 12, on "Appendicitis," and Charles S Wilson Gentry, on 'Business Methods of Physicians "——Roy Penix addressed the Craighead County Medical Society January 21, on "Laws That Concern the Medical Profession'——Drs Jay F Schamberg, Philadelphia and Thomas Parran, Jr, assistant surgeon general, U S Public Health Service, among others, were guests at a dinner, recently, in Hot Springs, given by the Garland County-Hot Springs Medical Association

CONNECTICUT

New Haven's Health Record — In general, 1927 was a favorable health year in New Haven It is noteworthy that no deaths occurred from typhoid, measles and whooping cough and only three deaths were attributed to diphtheria There were no cases of smallpox in the city or the state A diphtheria immunization campaign has been carried on in New Haven for several years During 1927, 4,457 children were immunized against diphtheria, now more than 75 per cent of the school children and at least 25 per cent of the preschool children are protected The health department moved its laboratory to more commodious quarters, there was an increased attendance at the venereal clinics, and two more inspectors were added to the mosquito control staff The health department has made a detailed study of the tenement houses in connection with a health survey, and there was a lower bacteria count and higher butter-fat content in the milk supply Among the outstanding needs in the health program are a psychopathic ward and a convalescent home The department expresses its appreciation of the cooperation of the medical and nursing professions and of the executive officers of the city and other nonofficial groups

FLORIDA

Society News—Dr William D Haggard, Nashville, Tenn, formerly President of the American Medical Association, addressed the Palm Beach County Medical Society, February 7, on Carcinoma of the Colon," and Dr Leonard G Rowntree, Rochester, Minn, February 13, on "Recent Advances in Medicine"

Hospital News—The home for the aged and infirm members of the United Brotherhood of Carpenters and Joiners of America, near Lakeland, was expected to be completed in January The brotherhood purchased 1,826 acres there several years ago The new building will accommodate 400 persons, it was constructed by a per capita tax of 10 cents a month on each member ——The Bayside Hospital, Tampa has closed ——The Monroe Memorial Hospital, Ocala, was formally opened, January 6, it has a capacity of sixty-six patients, is fireproof, and is located on an 8 acre tract

GEORGIA

Society News —The Fulton County Medical Society, Atlanta, conducted a symposium on the pneumonias February 2, the speakers were Drs Joseph A McGarity, Elmore C Thrash, Rufus T Dorsey, Odom O Fanning and Henry C Sauls ——Dr William A Selman read a paper on "Acute Appendicitis" before the Fulton County Medical Society, Atlanta, February 16 ——Dr Stewart R Roberts read a paper before the Emory Medical History Club, February 27, in the Wesley Memorial Hospital, Atlanta, on "Withering and Digitalis"——Dr William A Upchurch addressed the Fulton County Medical Society, Atlanta, March 1, on "Pyogenic Infection of the Kidney"

Dr de Schweinitz to Open Calhoun Lectureship —The first address under the Abner Wellborn Calhoun lectureship of the Medical Association of Georgia will be given, May 9 by Dr George E de Schweinitz, Philadelphia, Past President of the American Medical Association, on "Headaches" The Calhoun lectureship has been established by the state association (The Journal, Oct 1, 1926, p 1156) to provide an annual lecture Members are requested to contribute to the fund, which will be placed in a trust company to be held in trust for the association, only the interest to be used each year The visit of Dr de Schweinitz, who was the unanimous choice of the committee, will be without expense to the association

ILLINOIS

Personal.—Dr Robert M Hathaway has been appointed director of the Pulaski County Health Unit Dr Hathaway formerly was director of the Daviess County Health Department, Kentucky

Hole in Reservoir Causes Epidemic —Fifty-four persons in Marseilles consulted physicians about January 7 because of an intestinal disorder which was traced to the public water supply It is estimated that several times that number of persons were affected The state department of health on request immediately made an investigation, finding evidence of pollution in the distribution system and less evidence at the pumping station Chlorinated lime was used to sterilize the water in the reservoir, and a chlorinating machine was installed It was difficult to convince the city officials that the water, which flows from artesian wells and always has been considered wholesome, was at fault When the reservoir was emptied, a hole was found in the bottom of the wall which adjoins a power race carrying highly polluted water from the Illinois River When the water in the reservoir was lower than the water in the race the polluted river water flowed into the reservoir The fact that an ice jam in the river occurred just before the epidemic, causing the water in the race to be abnormally high completed the chain of evidence incriminating the water supply as the cause of the epidemic

Chicago

Sunday Public Medical Lectures —Under the auspices of the Chicago Academy of Sciences and the northside branch of the Chicago Medical Society, a series of free public lectures on medical topics will be given at the academy, Lincoln Park and Center Street, at 3 30 p m on Sundays, as follows

'Preventive Medicine Dr Nathan Smith Davis III March 18
Heart Disease in Childhood Dr Harold A Bachmann March 25
Cults Quacks and Cures Dr Morris Fishbein April 1
Tuberculosis, Dr Ethan Allen Gray April 15
The Preschool Child Dr Gustav L Kaufmann April 22
The Prevention of Contagious Disease Dr Archibald L Hoyne April 29

Society News —Dr Charles B Reed will address the Chicago Gynecological Society, March 15, 50 East Erie Street, on 'Impetigo or Pyodermatitis Neonatorum" and Dr Charles E Galloway on 'Anemia in Pregnancy"——The Chicago Urological Society will hold a joint meeting with the Chicago Medical Society March 21, on the general subject of recent therapy in urology, the speakers will be Drs Harry C Rolnick, Charles M McKenna, Harry B Culver, Russell D Herrold, Vincent J O Conor and Gustav Kolischer——The Chicago Neurological Society will be addressed March 15, at the Drake Hotel, by Dr Eugene F Traut on "Diabetes Mellitus in Disorders of the Hypophysis', Dr S E Brown will present specimens of multiple melanotic tumors of the nervous system, Dr Lewis J Pollock will speak on "Subjective Sensory Disturbances in Peripheral Nerve Lesions' ——The Chicago Orthopedic Club was addressed, March 9, at the Crerar Library by Dr John Albert Key, St Louis, on Physiology and Reactions of Joints'

INDIANA

Society News —Dr Gabriel Tucker associate professor of bronchoscopy and esophagoscopy, University of Pennsylvania Graduate School of Medicine, Philadelphia, addressed a dinner meeting of the Indianapolis Medical Society, February 28, on 'Bronchoscopy in Diseases of the Lungs"——Dr Charles F Neu, Indianapolis, addressed the St Joseph County Medical Society, South Bend February 17, at a banquet on "Epidemic Encephalitis"——Dr James H Stygall, Indianapolis, gave a demonstration of a periodic health examination before the Jefferson County Medical Society, Madison, February 27, Dr Stygall has been elected president for 1928 of the Indiana Tuberculosis Association

Research Fellowship Relating to Children's Health —The Indiana University School of Medicine, Indianapolis announces that under the Huesmann Foundation a research fellowship at the James Whitcomb Riley Hospital for Children is open to medical graduates who have had two years internship, one of which must have been in the specialty in which research will be undertaken Applications should be sent to Dr Burton D Myers, secretary of the committee before May 15 with records and references The service begins July 1 A personal conference will be required before final selection is made, and consideration will be given to those who have shown research ability The appointment is for three years at $2,500 a year, in any field relating to children's health

IOWA

Personal —Dr Edward Schifferle Creston, has retired from the relief medical employment and pension department of the C B & Q Railroad after forty years of service——Mr Robert E Neff, formerly administrator of the University of Indiana Hospitals, Indianapolis, has accepted the superintendency of the University of Iowa Hospital, Iowa City

Joint Health Meeting —The first joint program of the Iowa Tuberculosis Association, the Iowa Heart Association, the Iowa Sanatorium Association and the Iowa Trudeau Society was held at Davenport, February 23-24 Among others Dr Royal W Dunham Ottawa Ill spoke on "The Early Diagnosis Catches the Germ", R L Reid, superintendent of schools, Keokuk 'Health Teaching Methods', Dr Robinson Bosworth, Rockford Ill, 'Let Your Doctor Decide," and George H Wandel, D D S, Iowa City "The Tooth Question"

Society News —The Linn County Medical Society Cedar Rapids, was addressed January 19, on "Focal Infections Followed by Intracranial Complications as Met by the General Practitioner' by Dr Cassius C Rogers, Chicago——Dr Gilbert G Cottam Sioux Falls S D, addressed the Woodbury County Medical Society Sioux City on "The Medical Profession and the Law'——Dr James F Gerken University of Iowa Extension Department, addressed the Hardin County Medical Society, January 12, on Infant Feeding"

KENTUCKY

Bills Introduced —Senate bill 230 provides for the establishment and maintenance in counties containing cities of the first class of a hospital for the treatment of persons affected with tuberculosis House bill 293 provides for the regulating and licensing of chiropractors House bill 463 provides for the reorganization of the state board of health House bill 486 provides that all pharmacies and drug stores must be owned and operated by registered and licensed pharmacists

LOUISIANA

Society News —Base Hospital number 24, the Tulane World War Medical Unit, held its third reunion at the Hotel Roosevelt, New Orleans, February 2 which was approximately the tenth anniversary of its departure from Fort Oglethorpe, Georgia, for France

Free Treatment for Crippled Children —The orthopedic surgeons of New Orleans will examine and diagnose the condition of all crippled children brought to the free central clinic at 920 Common Street, New Orleans, March 13, March 15 and March 17, under the auspices of the Community Chest and Central Council of Social Agencies The object of the clinic according to the *Times-Picayune* is to bring to the attention of responsible persons the fact that the hospitals of New Orleans, when necessary, will provide free treatment for indigent crippled children, and that the earlier in life a crippled child is treated, the better are his chances for relief A special effort will be made to discover those crippled children who are not in school either because of their handicaps or their tender age

MASSACHUSETTS

Bills Introduced —House bill 62 would repeal the provision allowing counties to make contracts for the treatment of tuberculous patients in some state sanatorium House bill 441 would require all persons handling food and drugs to be examined and would prohibit persons having certain diseases from handling any food or drugs for sale House bill 488 provides for compensation, on certain specific proofs, for hernia House bill 791 would amend the nurses' law so as provide that applicants for registration must show graduation from a school which gives a three years course in connection with a hospital of not less than fifty bed capacity House bill 909 provides that all state institutions, police stations, public bath houses, etc must be equipped with a pulmotor

Personal —Dr Richard P Strong, Boston, was guest of honor at a dinner given by the Harvard Union, March 1, where he exhibited moving pictures taken last year in Africa on an expedition under the auspices of the Medical School of Harvard University ——Harris H Wilder, Ph D, professor of zoology Smith College, Northampton, and the author of various works on zoology and anthropology, died, February 27 aged 63 ——Drs Randall Clifford and Howard B Sprague have been appointed assistants in medicine for one year at the Medical School of Harvard University, Boston, Dr Charles W Young associate in comparative pathology for one year from September, 1928, and Dr Frank Brostrom, a teaching fellow in orthopedic surgery for several months ——Dr William G Watt has been appointed assistant dermatologist to the Holyoke Hospital, Holyoke

MICHIGAN

Council on Graduate Instruction Established —At the last meeting of the council of the Michigan State Medical Society, a council on graduate medical instruction was established It is to comprise the director of the department of postgraduate medicine of the University of Michigan, the secretary of the state society, the chairman of the society s committee on medical education the chairman of the council's committee on county society work, and the editor of the state medical journal The Michigan State Medical Society, which has been a leader in graduate work for its members, conducted fourteen postgraduate conferences in various communities in Michigan during 1927 and has arranged for similar conferences to be held this year

Annual Cancer Week —The program of the annual cancer week arranged by the cancer committee of the Wayne County Medical Society Detroit, began, February 27 This demonstration was to interest the public in the early signs of malignant disease and to teach them to consult physicians at an early stage Cancer clinics were held at nine Detroit hospitals by a large number of physicians among whom was Dr William P Healy, New York, who gave an address at the auditorium of the society, Tuesday evening, on 'Early Diagnosis of Cancer ' Specimens were on display Dr Donald C Balfour, Mayo Clinic, Rochester, Minn, lectured March 6 on "Surgical Treatment of Gastric Cancer, and Drs Fred W Rankin and Walter E Sistrunk of the Mayo Clinic on the value of surgery of the colon

MINNESOTA

Health at Minneapolis —Telegraphic reports to the U S Department of Commerce from sixty-eight cities with a total population of about 30 million for the week ending February 18 indicate that the lowest mortality rate (8 6) was for Minneapolis, and that the mortality rate for the group of cities as a whole was 14 The mortality rate for Minneapolis for the corresponding week last year was 10 7, and for the group of cities 13 5

Society News —The March 5 meeting of the Hennepin County Medical Society which was on medical economics, was addressed by Drs H M Johnson, Edward A Meyerding Willard L Burnap James T Christison George A Earl Elexious T Bell, Richard E Scammon, Ph D, and Dr Alfred E Comstock, secretary, state board of medical examiners Dr Axel E Hedback has been elected president of the society for the ensuing year ——Dr Robert O Earl St Paul, was reelected president of the board of directors of the Northwestern Baptist Hospital Association and Dr George A Earl was reelected president of the association at the annual meeting in January

MONTANA

Society News —The Yellowstone Valley Medical Society will have an annual clinical session in both hospitals of Billings, March 25 Twelve visiting physicians will take part in the discussions in the afternoon sessions ——Governor Erickson has appointed a committee of physicians comprising Drs George M Jennings Missoula, president of the state medical society, Byron L Pampel, Livingston, of the state board of health and Sidney A Cooney, Helena, to make an investigation of the state hospital for the insane at Warm Springs

NEW JERSEY

Bills Introduced —Senate bill 193 would allow a county to contract for the treatment of indigent patients in privately owned and maintained hospitals House bill 206 provides for the court appointment of expert witnesses

Personal —A testimonial dinner was given by the Orange Mountain Medical Society, East Orange, March 9, in honor of Dr Thomas W Harvey, who has completed fifty years in the practice of medicine The speakers included Dr Walter P Conaway, Atlantic City, and Dr Maximillian Danzis, Newark, president of the Essex County Medical Society, Dr Richard D Freeman presided

NEW YORK

Dr Fronczak Reappointed —Dr Francis E Fronczak, who has been in charge of health work in the city of Buffalo for seventeen years, was reappointed health commissioner by unanimous vote of the reorganized board of health, February 9 Dr Charles A Bentz, superintendent of laboratories, has been appointed director of the division of communicable diseases, and the laboratories will remain under his charge

Personal —Dr Robert H Breed has been reappointed town health officer of Wappingers Falls for another four years ——Dr Reeve B Howland has been reappointed health officer of Elmira for a four year term ——Dr Samuel Brock has been appointed assistant professor and Drs Rhoda Muriel Ivimey and Harold R Merwarth, instructors in the department of neurology at the University and Bellevue Hospital Medical College

Bills Introduced —Senate bill 444 and house bill 1110 provide that all actions for malpractice must be brought within one year after the cause of such action accrues Senate bill 725 would prevent pharmacy apprentices from preparing prescriptions Senate bill 814 and house bill 1116 provide that no article which is prepared shall bear a label indicating that such article was prepared by a person who is a physician unless such person is a duly licensed physician House bill 33 would prohibit experiments being made on a living dog House bill 481 increases the penalty for the unlawful sale of narcotics House bill 748 provides that actions on claims under the Workmen s Compensation Act shall be brought within two years House bill 914 provides that allowances for tuberculous patients in the City of New York may be paid although the patient is receiving treatment in his home on the certificate of the city board of health House bill 977 and house bill 1028 would allow physicians to give contraceptive treatments, including the use of instruments House bill 979 provides that there shall be a psychologist appointed to examine defective children under the jurisdiction of the Chautauqua county court House bill 1113 would require the labeling of cosmetic preparations used as hair dyes, hair tonic, face bleach and face cream

New York City

Fifth Harvey Lecture —Dr George R Minot, clinical professor of medicine, Medical School of Harvard University, Boston, will deliver the fifth Harvey Society lecture at the New York Academy of Medicine, Friday evening, March 16, on The Treatment of Pernicious (Addison's) Anemia"

Personal —The friends of Dr Ludwig Weiss surprised him recently by a dinner to commemorate his seventy-sixth birthday ——Dr Edward Frankel, Jr, has been elected president of the American Stomatological Association ——Prof James Kendall, Sc D, dean of the graduate school, New York University, will resign at the end of the academic year, it is reported, to accept the chair of chemistry at the University of Edinburgh

"Annual Graduate Fortnight" — Arrangements are being made by the New York Academy of Medicine for the first "annual graduate fortnight' for the benefit of general practitioners and specialists It will comprise a series of lectures at the academy, coordinated clinics and demonstrations in hospitals on "The Problem of Aging and Old Age" to be given during the first two weeks of October Eminent authorities will be invited to take part Emphasis will be placed on the early recognition and prevention of conditions that are commonly ascribed to aging with courses on functional tests of organs It is planned to have each year an annual graduate fortnight" on an important subject, which will be approached from various angles

First Unit of Medical Center Opens—The Presbyterian Hospital building in the medical center, One Hundred and Sixty-Eighth Street and Broadway will be officially opened, March 16, for inspection by medical authorities A few days later patients will be admitted to the hospital and outpatients to the Vanderbilt Clinic The Joint Administrative Board of the Medical Center says that this is the tallest hospital structure in the world, it houses the Presbyterian Hospital the Sloane Hospital for Women and the Squier Urological Clinic and has an ultimate bed capacity of 1 177 The Anna C Maxwell Hall will also be occupied by the incoming class of about fifty student nurses This fifteen story structure is the residence of the Presbyterian Hospital training school pupils, having quarters for 360 nurses, a large swimming pool and a recreation hall

Study of Epidemic Encephalitis—The director of the William J Matheson Survey of Epidemic Encephalitis, Dr Josephine B Neal, left for Europe February 23 Her observations of what is being done there will be incorporated in a report of research that has been done in this country as the basis for an active campaign to combat this disease The Matheson survey will be an international attack on epidemic encephalitis, which since 1917 is said to have averaged 200,000 cases The other members of the commission are Drs Frederick Tilney, William Darrach, Hubert S Howe, Haven Emerson, Frederick P Gay and William H Park Dr Neal, the director who has devoted the last seventeen years to studies of diseases of the central nervous system, is chief of the meningitis division of the research laboratory of the New York City Health Department

Moving Pictures of Dr Pavlov's Experiments—The films taken in the laboratories of Drs I P Pavlov and N I Krasnogorski, Russian physiologists, are said to be now in New York and will be exhibited to medical societies and universities The pictures, it is reported, show the experiments by which these men sought to demonstrate that the brain is only a storehouse for reflexes and that the complex reactions of the brain are more apparent than real They work with small children, dogs and monkeys, depicting the play activities of infants as compared with monkeys and showing it is said, the importance that conditioned reflexes may have in the practical problems of child training The films were produced by Sovkino of Moscow and were brought to this country by the Amkino Corporation, American distributors of Sovkino pictures

Graduate School Changes Policy—Director Appointed—Following a survey of the resources of the New York Post-Graduate Medical School and Hospital, which has been under way for several months, recommendations were made for a new building and better integration with the field of graduate medical teaching Dr Edward H Hume, formerly president of the College of Yale in China, has been appointed director, effective, March 1, under the new regime responsibility will be centered through the newly appointed executive officer in the board of directors Dr Hume was born in India the son of an American missionary, he is a graduate of Yale College and Johns Hopkins University School of Medicine The New York Post-Graduate Medical School and Hospital was founded in 1882 by Dr Daniel B St John Roosa and incorporated in 1886 More than 25,000 physicians have matriculated at the school during the last forty-two years The directors, appreciating the need of a new program adequate to the advancement in medical practice, have decided to build up a teaching, research and financial foundation which will enable the school more adequately to serve the field of graduate medical work

OHIO

Hospital News—The Toledo State Hospital commemorated its fortieth anniversary, January 12. Forty years ago, the first 300 patients were transferred from the Columbus and Dayton state hospitals Of the first 2,000 patients admitted, about seventy are still in the institution

Society News—Dr William E Lower, associate professor of genito-urinary surgery, Western Reserve University School of Medicine, Cleveland addressed the Licking County Medical Society, Newark March 2 on prostatic obstruction, Dr Henry Burner Anderson on "Experiment in the Application of Diabetic Dietetics', Dr Christian J Biedenkopf, modern treatment of rickets, Dr Thomas L Baxter, appendicitis complicating pregnancy, and Dr Paul C Keller, "Routine in Urine Analysis'

Illegal Practitioners Convicted—The secretary of the state medical board, Dr Herbert M Platter, Columbus, reports the following recent convictions of illegal practitioners

N N Simons Akron was tried and found guilty of conducting an office February 24

G H Bellinger Akron unlicensed chiropractor was found guilty of conducting an office without a certificate February 24

William Kensinger Paulding unlicensed chiropractor was found guilty of illegal practicing

Charles V McGinty was fined $500 and costs February 10 in probate court of Erie County $400 of the fine being suspended on condition that he quit practicing

C W Ferguson Columbus was found guilty of opening a chiropractic office without a license and was fined $100 and costs

V D Martindale Sunbury chiropractor pleaded guilty to advertising in probate court of Delaware County and was fined $25 and costs

Grace Loop and J A Loop unlicensed chiropractors of Troy arrested for advertising pleaded guilty and were fined $25 and costs which was limited on condition that they discontinue practice

The following persons were arrested for practicing chiropractic illegally and their cases continued on promise that they would cease practicing

C V Peterson Belmont County
I L Hall Barnesville
B C Hall Barnesville
G F Malin Martins Ferry

A number of other chiropractors were arrested for practicing without a license but their cases have not yet been tried

OKLAHOMA

Hospital News—The corner stones for the state hospital for crippled children which is under construction near the University Hospital, Oklahoma City and of the new medical building were laid by the masonic fraternal organization February 13

Society News—Dr Myron S Gregory, Oklahoma City addressed the Payne County Medical Society recently, on "Mental Diseases'——Dr Claude T Hendershot, Tulsa, a councilor, addressed the Osage County Medical Society February 6, on "Hypertension," and Dr Charles J Woods, Tulsa on "Radium Therapy in Dermatology"——Dr Ethan E Waggoner, Tonkawa, addressed the Ponca City Lions Club recently, on 'The Fallacies of Criminal Insanity,' and Dr Charles L Blanks, Ponca City, on "Care of the Eyes"——The Lincoln County Medical Society was addressed January 4 at Chandler by Dr J W Rollins Prague, on "Hysteria," and by Dr William J Wallace, Oklahoma City on "Pyelitis"——Dr Walter S Stevens, medical director department of Indian affairs, Washington, D C has been investigating health conditions among the Otoe and Ponca Indians

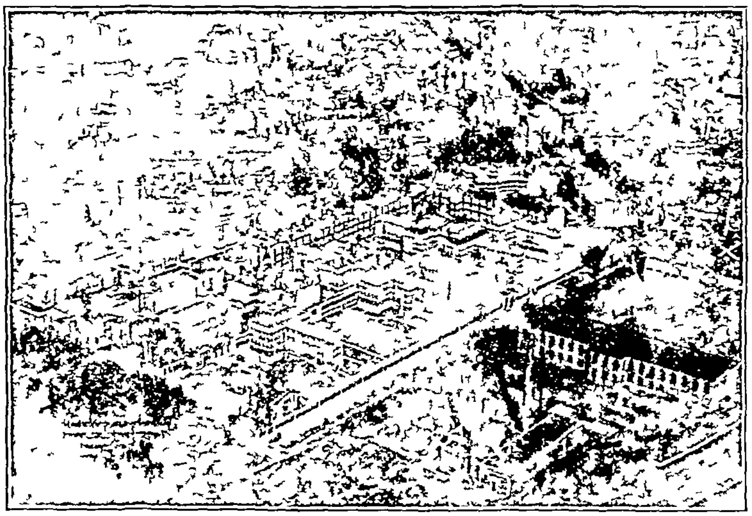
PHILADELPHIA

Two Die of Anthrax—It was reported, March 3 that four persons employed in a hair curling factory contracted anthrax from a shipment of animal hair from Russia and China Two of the employees died, the other two were seriously ill

Society News—Quasimedical Meeting—The Philadelphia County Medical Society will hold a "quasimedical meeting March 14, on the program will be a paper by Joseph F Lamorelle, president judge of the Orphans' Court, on "Status of a Physician as a Witness to a Will" to be read by his son, Joseph, Ralph B Evans, attorney for the society will speak on "A Doctor in Court" and Dr John M Fisher, on 'Doctors in the Courts with Special Reference to Their Duty as Professional Witnesses in Gynecologic Cases——Dr Orlando H Petty addressed the Academy of Stomatology, February 28, on 'Regular Health Examinations'——Dr Thomas A Shallow gave a lantern demonstration before the Obstetrical Society of Philadelphia March 1, on "Craniospinal Defects of the New-Born'——A moving picture demonstration of the clinical phenomena, bronchoscopic drainage and experimental production of postoperative pulmonary atelectasis was presented before the College of Physicians of Philadelphia, March 7, by Drs Walter Estell Lee, Gabriel Tucker, Louis H Clerf Isidore S Ravdin and Eugene P Pendergrass, Dr John T Farrell, Jr, read a paper on roentgenographic incidence of calcified pulmonary foci and their significance, and Dr Charles W Burr, a paper on "Uses of a Medical Library"——Among others, Dr William U

McClenahan addressed the Pathological Society of Philadelphia, March 8 on hypoglycemia associated with hypertrophy (adenoma) of the islands of Langerhans

The New Philadelphia General Hospital—With the recent dedication of six new units costing $5,000,000 another great step in the transformation of the Philadelphia General Hospital was consummated and its capacity increased to a total of 2 600 patients The Philadelphia General Hospital, which will celebrate its two hundredth anniversary in 1931, originated in a small infirmary of the almshouse at Fourth and Pine streets and, in *1767*, moved to Tenth and Pine streets In these historic buildings many of Washington's soldiers were cared for, and from them more than *200* sick and infirm were evicted by the British of whom only eighty-two returned to the infirmary alive after General Howe left the city New buildings were again constructed in 1834 west of the Schuylkill River in Blockley township, where the institution acquired the familiar name Blockley and where Rush, Bond, Wistar, Gerhard and Osler labored Here was an institution comprising a home for the indigent, a hospital for mental diseases and the general hospital proper The adoption of a new city charter and the creation of the department of welfare about 1920 brought about the separation of the purely indigent patients from those who were ill A new hospital for mental diseases was then erected at Byberry, and the 1 400 mentally ill patients were moved there in 1926 All of this building and moving was in preparation for the rebuilding of the general hospital The old structures at Thirty-Fourth and Pine streets and the old stone wall which surrounded the hospital were then demolished and the new hospital constructed on the site Ground was broken for the new units Sept 21 1925 the corner stone was laid May 18, 1927, and the formal dedication took place, Dec 7 1927 Thus the Philadelphia Almshouse, as Mayor Kendrick said at the ground breaking ceremonies, exists only in history and Blockley is no more As can be seen from the picture, the new hospital units are five stories high with open roofs Patients can be brought by elevator from any floor up there for air and sun In the center of the group is the administration building with offices quarters for social workers and an auditorium seating 500 The new buildings add 1,250 beds, 400 for surgical cases, 400 for medical cases, 250 for children and 200 for maternity and gynecologic cases, besides laboratories, rooms for segregating patients, seven operating rooms diet kitchens, service rooms and a clinical amphitheater seating 250 The wards are arranged along a central corridor with a transverse corridor at each floor The T-shaped buildings were planned with the idea of simplicity of construction and functioning, but with no feature necessary for the care of the sick omitted The hospital is a great asset to Philadelphia and a fitting expression of the desire of its citizens to care for their sick It will in the future, as it has in the past be a field of labor for other great men and an instrument for the good of mankind The transformation of this institution was largely accomplished during the administrations of Dr Wilmer Krusen as director of health and of its superintendent Dr Joseph C Doane, who, during the ensuing year, is the president of the American Hospital Association



SOUTH CAROLINA

Bills Introduced—Senate bill 1063 provides for the licensing and regulating of chiropractors House bill 1277 provides for sanitary regulations to be promulgated by the state board of health

Society News—More than 100 persons attended the annual banquet of the Marlboro County Medical Society, January 12, at Bennettsville, Dr D Lesesne Smith, president, South Carolina Medical Association, discussed "Upper Respiratory Infections in Children", Dr Wilburt C Davison, dean, Duke University Medical School, Durham N C, the plans of the new medical school, Dr Marvin Pierce Rucker, Richmond Va, "Relation of the Female Sex Hormone to the Onset of Labor", Dr LeGrand Guerry, Columbia, surgery of the thyroid gland, and Dr Marion R Mobley, Florence, "Infections of the Maxillary Sinus"

VIRGINIA

Bills Introduced—House T N 103 provides that physicians' fees for examining persons as to their sanity shall be paid whether or not such person is committed to a sanatorium House bill 199 would include homeopathy, osteopathy, chiropractic and chiropody under the medical practice license law

WEST VIRGINIA

Personal—Dr Harry B Neagle has taken up the duties of health officer of Lewis County with headquarters at Weston Dr Neagle has previously engaged in public health work in Michigan and Georgia

Society News—Dr Joseph Colt Bloodgood, Baltimore, gave an illustrated lecture before the Ohio County Medical Society, March 2, on "What Everybody Should Know About Cancer'——Dr Morgan T Morrison, Sutton, addressed the Central West Virginia Medical Society, January 27, on "The Social Evil" The next meeting of the society will be April 18 at Richwood——Dr Robert D Roller, Jr, Charleston, addressed the Raleigh County Medical Society, January 26, on "Public Health in the Schools,' and Dr Adrian H Grigg, Beckley, on "Present Status of Serums and Vaccines"——The February meeting of the Harrison County Medical Society, Clarksburg, was addressed by Dr Eugene O Chimene, Clarksburg, on "An Analysis of the Causes of Vomiting'——The Barbour-Randolph-Tucker County Medical Society, Elkins, held a symposium on the lung, January 24, the speakers being Drs E Mendel Hamilton, Belington, and Solomon G Moore, Orr L Perry, Charles H Hall and Benjamin I Golden, all of Elkins——The Kanawha County Medical Society was addressed, February 7, at Kanawha by Drs Earl Bennette Henson and John E Cannaday of Charleston on fractures, and February 21 by Drs Robert K Buford and Henry L Robertson of Charleston on goiter——Dr George Wilson, Philadelphia, addressed the Ohio County Medical Society, Wheeling, February 10, on "Diagnosis and Treatment of Neurosyphilis with Special Reference to the Use of Malaria"

GENERAL

Waiting List of Cattle for Tuberculin Testing—There was a waiting list, January 1, of 4,103,386 cattle to be tuberculin tested The U S Department of Agriculture regards this as evidence of the desire of live stock owners to free their herds from tuberculosis At that time, there were 2,024,505 cattle in accredited herds and 436 counties in the United States were recognized as modified accredited areas, *that is*, areas where the infection is not more than 0 5 per cent During December, 935,985 cattle were tested and among them were 18,966 reactors

Brazil Translates Joint Report on Health Education—The commissioner of health in Rio de Janeiro, Brazil, has obtained permission to translate for distribution in that country the report of the Joint Committee on Health Problems in Education of the National Education Association and the American Medical Association, prepared under the direction of Dr Thomas D Wood, New York, chairman The members of the committee representing the American Medical Association were Drs John M Dodson, Chicago, Richard W Corwin, Pueblo, Colo, Edward Jackson, Denver, and Henry L K Shaw, Albany

News of Epidemics—A total of sixty cases of measles in Hopkins County, Ky, most of them in Madisonville, was reported, February 14——During February, scores of cases of mumps were reported to have occurred in Columbus Ind——Two cases of epidemic cerebral spinal meningitis in the city workhouse, St Louis, have been reported A quarantine was established, and prisoners gaining their release in the interim were held an additional ten days The quarantine was lifted about February 28——Thirty one cases of scarlet fever were reported in Davenport, Iowa, February 15——Fifteen cases of smallpox were reported among residents of North Ottawa Ill, February 17——Forty cases of smallpox were reported in Rowlesburg, W Va, February 10

Another Clinical Tour of Europe—The American College of Physical Therapy is sponsoring a party which will leave New York for a clinical tour of Europe May 26 Twenty-one clinics will be visited, including St Bartholomew s, Middlesex London General and the Lord Treloar hospitals London Salpetriere and American hospitals, Professor d Arsonval s clinics Dr Riviere s Clinic, Paris, Professor Rollier s Clinic at Leysin, Switzerland, Zurich University and various clinics in Vienna Germany and Denmark Preliminary lectures will be given on board en route to familiarize the party with what to expect at these places Physicians interested are invited Inquiries should be addressed to the college, clinical tour department, 25 Broadway, Suite 656, New York City

House Committee Approves Gorgas Memorial Laboratory—The bill authorizing the maintenance of the Gorgas Memorial Laboratory on the Isthmus of Panama and providing *that $50 000 annually be paid to the Gorgas Memorial Insti*tute of Tropical and Preventive Medicine, Inc, for the operation of the laboratory has been approved by the committee on foreign affairs of the House of Representatives on condition that it be constructed within five years that each of the Latin American governments be invited to contribute annually toward its maintenance, and that the United States be represented permanently on the board directing the administration of the laboratory while the Latin American governments contributing have the privilege of being repre*sented on the board*

Committees of Commission on Medical Education—The chairman of the Commission on Medical Education, A Lawrence Lowell, Ph D president of Harvard University has appointed three committees of from five to seven members each to deal with groups of problems before the commission The chairman of the committee on premedical training is Chancellor Samuel P Capen of the University of Buffalo the chairman of the committee on training in the medical sciences is Lafayette B Mendel Sc D, Starling professor of physiologic chemistry, Yale University School of Medicine, and the chairman of the committee on clinical training is Dr David L Edsall, dean of the Medical School of Harvard University The director of study of the commission Dr Willard C Rappleye 215 Whitney Avenue, New Haven, is secretary of each of these committees

House Committee Favors Coordination of Health Activities—The House Committee on Interstate and Foreign Commerce has unanimously recommended the Parker bill which provides for the coordination of public health activities of the government The committee, however, struck out the part which gave the President authority to transfer any public health unit from one division of the government service to the U S Public Health Service and instead, reported the bill to the House as providing that the head of an executive department may request the Secretary of the Treasury to detail officers of the public health service to that department The bill would give more specific statutory authority for certain activities of the public health service and would broaden others to a limited extent It would enlarge the functions of the hygienic laboratory board, increase the pay of the surgeon general of the public health service, establish a nurse corps and place the dental and some other scientific and technical personnel on the same permanent and commissioned basis that the medical officers in the service now are Sponsors of this legislation are confident that it will pass the house at this session

Bequests and Donations—The following bequests and donations have recently been announced

Mount Sinai Hospital New York $15 000 by the will of the late Mrs Virginia A Stern

The New York Academy of Medicine $5 000 and his Brooklyn home valued at about $85,000 to the Physicians Home 901 Lexington Avenue Brooklyn by the will of the late Dr Lewis D Mason

St Luke's Hospital St Louis three eighths of the estate of the late Mrs Noah H Swayne Toledo Ohio after a number of individual bequests are made, estimated now at about $250 000

Brockton Hospital, Brockton Mass a building for the treatment of children and a $10 000 endowment for its upkeep by Mr and Mrs Harold C Keith, in memory of their daughter Barbara

Lebanon Hospital, Hebrew Orphan Asylum and the Montefiore Home New York each $1,000 by the will of Rosa Maas

Presbyterian Hospital, Chicago $10,000 Chicago Home for Incurables $5 000, and the Home for Disabled Children Maywood Ill $5 000, by the will of the late Mrs Mary E Simmons Chicago

St Agnes Hospital White Plains N Y and St John's Hospital Long Island City, each $2 000 by the will of the late Anna F Maynard

Flushing Hospital Flushing N Y $10 000 by the will of the late John H Ridenouer

Methodist Episcopal Hospital Brooklyn $6 000 by the will of the late Emma E Hyde

Johns Hopkins University and Johns Hopkins Hospital Baltimore $50 000 and $105 000 respectively and each half of the residue of the estate of Mrs Rebecca Lanier King by whose will is bequeathed also o the Presbyterian Eye Ear and Throat Charity Hospital Baltimore, $5 000 and St Joseph s Hospital $2 500

Montefiore Hospital New York, $25 000 by the will of the late Berthold Hochschild

Grant Hospital Chicago, $15 000, by the will of the late Mrs Phoebe Seipp Chicago

Stamford Hospital Stamford Conn about $400 000 by the will of the late William H Judd of that city

The Good Samaritan Hospital Portland Ore $15 000 by the will of the late Mrs Elizabeth C Good Portland

Montefiore Hospital New York $2 000 by the will of the late Reuben Robert Fogel

St Vincent s Hospital New York $5 000 by the will of the late Michael E O Donovan

St Luke s Hospital Marquette Mich $20 000 by the will of Mrs Seville H Morse

The Wisconsin Anti Tuberculosis Association $2 500 by the will of the late Charles F Pfister Milwaukee

The New York Association for the Blind about $50 000 by the will of the late Mrs Gertrude Westbrook Paris Texas on the death of her brother

New York University $14 450 for the study of the prevention and cure of pneumonia about $12 000 from the estate of Charles A Gillin for the endowment fund of the medical school $5 000 from R I Crane Jr for experimental work in physiology and $2 820 from many donors for the cardiac clinic fund

New York Eye and Ear Infirmary and the Babies Hospital New York and the Woman s Hospital in the State of New York each $10 000 and the Association for Improving the Condition of the Poor and the Children s Aid Society of New York, each $20 000 by the will of the late Miss Ellen King

St Peters Hospital Brooklyn $1 000 most of the remainder of the $200 000 estate of the late Miss Eugenie A Dittoe to be divided between St Vincent s Hospital and the Servants for the Relief of Incurable Cancer New York

CANADA

Motor Bus Tour of Europe—Through the cooperation of the Sun Life Insurance Company about thirty Canadian physicians specializing in tuberculosis, will make a motor bus tour in Great Britain, France and Italy of sanatoriums and other medical and research institutions They will also attend the meeting of the tuberculosis association in London and of the International Union Against Tuberculosis in Rome

Personal—A committee of laymen and physicians of Toronto is appealing for subscriptions for the purpose of honoring Toronto s veteran health officer, Dr Charles J C O Hastings, by establishing the Hastings scholarships in public health at the University of Toronto and by painting the portrait of Dr Hastings——Dr Lewis R Murray has been elected mayor of Sussex Nova Scotia——Dr John S Schram, London Ontario has been awarded a Carnegie medal for his gallant rescue of a man from drowning——Dr Charles Hunter has been appointed professor of medicine at the University of Manitoba Faculty of Medicine to succeed Dr Edward W Montgomery, now minister of public welfare of Manitoba

More About State Medicine—Commenting on an item in The Journal, Dec 10, 1927, entitled State Medicine in Canada' a correspondent of the *Canadian Medical Association Journal* says that it probably refers to the traveling clinics These, it appears, are manned by physicians in the government's employ who provide surgical attention more cheaply than physicians in the districts which this clinic may visit The correspondent believes that this phase of the government s activities will cause hardship to many physicians in the province He says that the minister of health, George Hordley, has prepared a bill to present to the legislature for the definite establishment of state medicine Another item notes that Mr Hordley said at the annual meeting of the United Farm Women's Association in Calgary that the traveling clinic provided a means of receiving the best possible surgical assistance in minor operations at a cost almost one-third less than that charged by the medical profession throughout the province He stated, it appears, that the government had no intention of interfering with the local physicians' business, at the same time the correspondent reports, 2,346 tonsillectomies were performed by this traveling clinic While the government organized the "clinic' to take care of needy cases in outlying districts it is said to have invaded some of the larger towns where there are competent physicians well able to take care of such cases

Foreign Letters

LONDON

(From Our Regular Correspondent)

Feb 18, 1918

The Problem of Otosclerosis

Otologists in this country think that the problem of the pathogenesis of otosclerosis requires investigation and that, to make an advance cooperation with workers in other fields is necessary The great advances in the collateral sciences such as biochemistry physiology and pathology, make it impossible for one specialist to make an investigation requiring an expert understanding of all these subjects In his presidential address on taking the chair at the Section of Otology of the Royal Society of Medicine Dr J S Fraser, well known for his work on the histopathology of otosclerosis, appealed for a national collective investigation of all aspects of the disease The council of the section at once appointed a committee to make the necessary arrangements for initiating and coordinating the research It may be recalled that early in 1926 the American Otological Society, appreciating the same need, appointed a committee to raise a fund to meet the expenses of such a research

The Drawbacks of Prosperity

The registrar-general's decennial supplement for England and Wales shows how interesting statistics usually regarded as dull and uninspiring, may become when intelligently analyzed A fact that stands out is a greater mortality from high living and excessive drinking among the well-to do than among the poorer Thus diabetes affects chiefly the classes provided with the means of overeating and under-exercising A striking example is the contrast between the farmer and the agricultural laborer The farmer probably gets a good deal more to eat than the laborer His diabetes mortality figure is 16, while that of the laborer is 7 3 It has long been believed that diabetes in later life is largely a disease of overnutrition Definite statistical evidence of this is provided by the fact that the mortality from this condition fell in this country when supplies were restricted during the war, and has risen most since these have been restored Similarly, the incidence of cirrhosis of the liver varies largely with financial means "Mortality from this disease may be to some extent an index rather of spirit drinking than of alcoholism in general' Heavy death rates from it occur among lawyers, authors, editors, journalists and actors, with those engaged in the liquor trade heading the list. In diseases of the digestive system there was a high mortality among barristers and dentists Barristers had the highest mortality from appendicitis other occupations with high mortality from it were auctioneers, architects and bank officials On the other hand, nineteen occupations in the classes described as skilled intermediate, and unskilled workers had no deaths from appendicitis The appendicitis death rate was two and one half times as great for the upper and middle classes as for unskilled workers the lowest class of the population Diabetes, appendicitis and suicide as causes of death showed high figures among farmers The first may be associated with free consumption of an abundant supply of food, though good living is not recognized as a cause of appendicitis The high rate of suicide is no doubt connected with the great financial depression of the farming industry "Plain living makes for health says the report 'but mortality rises again as poverty increases" Farm bailiffs and foremen have the lowest mortality of the 173 occupations classified, and the Church of England clergy the second lowest

Occupation for the Tuberculous

The generally accepted view that an open-air life is desirable for the tuberculous is questioned by Dr F N Kay Menzies, health officer to the London County Council In a report on the employment of the tuberculous, he says that the advice given to patients regarding their occupation is not always the best Not infrequently those whose original occupations were quite suitable were advised to seek a new one to obtain work in the open air, which is often arduous and exposed to all weathers, rather than remain in an office or workshop Open air work is considered by many to be of vital importance to the tuberculous, whereas an occupation free from worry and providing a good wage is infinitely more valuable Dr Menzies insists that, with few exceptions, the best occupation for a tuberculous person is the one to which he is accustomed and at which he can earn a good income, provided it can be carried out under reasonably hygienic conditions He finds that the working capacity of the tuberculous person whose disease is not arrested is not more than 50 per cent of the normal Many of these partly incapacitated persons, though unfit for ordinary work, can follow employments requiring little physical effort, with hours regulated to their capacity and in a hygienic environment Experience has shown that the training of adults over 25 in a new occupation, regarded as suitable on medical grounds is not practicable as a general policy The training of ex-service pensioners has proved of little practical value Specially organized schemes for the tuberculous are suggested, (1) in association with an institution for the treatment of tuberculosis, the employees living on the premises, or in a settlement as at Papworth (described in previous letters), (2) in a suitably arranged workshop, urban or rural, *the employees living in their usual homes e g, the Altro* Workshop of New York, the Factory-in-the-Fields, Leeds, and the Spero Workshops London However, the employment of the tuberculous at adequate wages for their maintenance cannot be done without financial loss On this report the Public Health Committee of the London County Council remarks "The whole question is one of national and not merely local policy, and we hope that the minister of health will accede to the request made to him by the National Association for the Prevention of Tuberculosis and by the council to institute an inquiry into the working of tuberculosis schemes in the country"

Outbreaks of Smallpox

The ministry of health has issued a circular to boards of guardians in regard to outbreaks of smallpox in various parts of the country among casuals (vagrants who tramp about the country and are admitted to the casual wards of workhouses) Effective arrangements are enjoined to secure that any case of smallpox occurring in a casual ward shall be detected promptly and that all necessary measures adopted to prevent the spread of the disease by persons who frequent casual wards While inspection at the time of bathing should be continued and rendered as efficient as practicable, the minister feels that, in view of the gravity of the situation, further action is required He therefore directs that the medical officer shall examine all casuals admitted with a view to detecting cases of smallpox A casual who would but for the issue of this direction have been allowed to take his discharge before the completion of two days detention should not be allowed to do so till he has been examined by the medical officer All febrile conditions found among the casuals, especially if accompanied by symptoms resembling those of influenza, should be regarded with suspicion, and if possible be isolated until a definite diagnosis has been made Fresh cases of smallpox are continually reported from various parts of the country During the last two weeks seven cases have been notified in London Thanks, no doubt, to prompt segregation, the outbreaks so far have been limited The London County Council has distributed to physicians a valuable lecture by its smallpox officer, Dr Wanklyn, on the diagnosis of the disease

Sudden Death from Injection of Soap and Water to Induce Abortion

The tragic end of a bride, just returned from her honeymoon, led to the trial for manslaughter of a "medical electrician" He stated that she came to him for electrical treatment for debility and that he did not know that she was pregnant While she was being treated, she suddenly sat up and collapsed Medical aid was summoned, but she could not be resuscitated The pathologist who performed the necropsy said that the deceased was a perfectly healthy woman On opening the uterus he found something suggesting an abrasion, and soapy fluid began to escape Sir Bernard Spilsbury (the government expert) said that the fluid was a strong solution of soap and water Both pathologists were of opinion that death was due to shock from injection of fluid For the defense it was urged that death was due to electric shock, if there was soapy water in the body, the woman might have injected it herself But an electrical engineer gave evidence for the prosecution to the effect that the apparatus found in the prisoner's rooms was comparatively harmless and that the amount of current to which it was limited was only 80 volts For the defense, Dr F J Browne, professor of obstetric medicine in the University of London, who attended the necropsy on the prisoner's behalf, expressed the opinion that death did not follow immediately on the injection, as microscopic examination showed that a miscarriage had been going on for a few hours He thought it possible that the woman might have injected herself and also agreed with the suggestion that death might result from the application of electricity at low pressure However, the prisoner was convicted and sentenced to seven years' imprisonment Though induction of abortion by injection of fluid into the uterus is a recognized method, in very few cases that have led to investigation in this country has it been employed

Railway Fatalities in 1927

The year *1927* was, in the matter of fatal railway accidents, the most serious since the remarkably bad year of 1915 The latter had a total of 269 passengers killed in train accidents Last year the total was twenty-six, which figure was made up of twelve in the head-on collision of February 14 at Hull thirteen in the derailment of August 24 at Sevenoaks, and one in the Peterborough North collision of December 7 Some satisfaction may be found in the fact that there were only three fatal train accidents which, in view of the dense operating conditions, is remarkable In fact, seeing that the true test as to safety is the number of accidents and not the total fatalities, one of the remarkable features of British railway operation is the rarity of accidents that have fatal results to passengers Since the opening of the present century there have been in all only eighty-four fatal passenger train accidents

Success of the Village Settlement for Tuberculosis

A village settlement for tuberculosis unique in this country, where the patients live with their families and maintain themselves by work, has been described in previous letters It is situated at Papworth in Cambridgeshire Describing the results in a lecture at the Royal College of Physicians, the medical director, Dr P C Varrier-Jones, gave them as follows 1 Complete absence during eleven years of clinical tuberculosis in the 133 children of men and women suffering from the disease 2 A village community maintained by the work of the industries 3 A total of $360,000 paid in wages to the settlers since *1918* 4 An aggregate sale of goods produced by them in that time amounting to $885,000 5 Arrest of the disease to such an extent as to justify an expectation of life thrice as long as that usually given in sanatorium statistics

PARIS

(From Our Regular Correspondent)

Feb 1, 1928

The d'Herelle Bacteriophage in the Treatment of Cholera

During his researches at Lille, Dr d'Herelle discovered in 1917, the existence of bacteriophages, which are living organisms associated with certain bacteria, can be extracted from bacterial cultures through filtration, and possess the capacity of destroying bacteria by lysis The main question consists in determining whether one is dealing with a filtrable virus or with an albumin secreted by a bacterium that is a parasite of the first, but the fact of the lysis of certain bacteria by the filtration products of their cultures is now established beyond all doubt, and the practical applications have been very encouraging The bacteriophage of bacillary dysentery is employed by the Oswaldo-Cruz Institute in Brazil and causes the rapid disappearance in that country of bacillary dysentery In Indo-China, d Herelle succeeded in eradicating the epidemic disease affecting buffaloes which had carried off from twenty to thirty thousand annually D'Herelle, who is a Canadian of French extraction, went from Lille to Leyden and is now located at Alexandria Egypt acting as director of the bacteriologic laboratory of the quarantine service in that city The British government appointed him to take charge of a special mission to India to study cholera He has returned to Paris, where he has reported the results of his mission The bacteriophage of the vibrio of cholera when it is found associated with the latter, engages in a struggle with the vibrio and often comes off victorious The cholera patients who recover spontaneously are those who have in advance an abundance of bacteriophages in the intestine One finds in India, in the Punjab, entire villages completely free from cholera though an epidemic rages around them owing to the fact that the drinking water in these villages contains the bacteriophage in abundance D'Herelle succeeded in eradicating the disease and immunizing the population of large areas by transferring to the wells of the country merely from 30 to 40 cc of the cultures of the bacteriophage, which he easily obtained The mode of treatment is simple A culture is prepared of the bacteriophage that is found in the stools of convalescents These cultures are somewhat peculiar in that the bacteriophage can feed only on living matter, and, furthermore, only on that to which it is habituated In this manner its activity can be increased so that it will completely destroy in a few hours the bacterial cultures Later, all that need be done is to administer a few cubic centimeters by mouth in repeated doses As it finds an abundant food supply in the infected intestine, it develops easily, and a cure is effected with surprising rapidity, corresponding to the speed with which it destroys the vibrios In Rajana, which has some 3 000 inhabitants, there were fifty-six cases of cholera, from July 3 to July 22 The treatment was begun, July 21, there were four new cases, July 23, but not a single case after that In Lalpura, with 1,500 inhabitants, there were thirty-nine cases from July 23 to July 26, July 28, there was just one new case and the epidemic was ended The most curious thing is that the persons thus treated disseminate the bacteriophage by their stools deposited on top of the ground and thus aid in stamping out the epidemic D'Herelle was the hardest put to it in treating the grave cases, the patients being for the most part moribund, and these were just the cases in which his aid was sought There was a mortality of 8 per cent in the patients treated and of 62 per cent in those not treated It appears, therefore, that the prophylaxis of cholera will consist henceforth in combating an epidemic of the vibrion septique with an epidemic of its parasite the bacteriophage, which, when enhanced by cultivation, rapidly destroys the vibrio If these statements are confirmed this will certainly be one of the greatest conquests of bacteriology

Contraindications to Marriage in Epileptic and Tuberculous Persons

French physicians are beginning to give thought to a peculiar medicosocial question After the war, pensions were granted to epileptic and tuberculous ex-service men These pensions have been gradually increased until they have reached considerable proportions Almost all these men find it easy to marry as they are assured of leaving at death a considerable pension to the surviving widow These marriages may result in many offspring of a deplorable nature Therefore the present tendency throughout the entire world, in view of principles of eugenics, is to prevent such subjects from having issue The government of Sweden is considering legislation contemplating sterilization (surgically or by means of roentgen rays) of epileptics degenerates and the insane Addressing the Societe de medecine de Bordeaux, M Anglade suggested prohibiting such pensioners from marrying, on pain of having their pensions canceled

The Resection of the Presacral Nerve

M Ferey has employed resection of the presacral nerve in inoperable cancers of the cervix uteri to ease the pain the results have always been favorable The same results were achieved in pruritus vulvae, vaginismus and genital hyperexcitability Ferey has begun to apply the method of late in painful chronic cystitis and in neoplasms of the rectum The technic of the operation is simple especially in thin subjects The only difficulty lies in dislodging the nerve completely from the fat in which it is embedded The results are prompt There have been no untoward incidents other than a few cases of transient retention of urine

The Intradermal Reaction to Cholesterol

An intradermal reaction to cholesterol was recently advocated, before the Societe medicale des hopitaux, by Loeper and Lemaire The authors use, for the test, oil to which cholesterol is added in the proportion of 8 mg per cubic centimeter A single drop of this mixture is injected into the skin The reaction is nil in normal subjects On the other hand, an erythematous papule develops and persists for several days in those who manifest one of the diathetic states characterized by a tendency to precipitate cholesterol (gout, cholelithiasis xanthoma) It is positive also in some obese persons in some who are subject to migraine and in subjects that were classed formerly as of slow nutrition but who, in reality, have an excess amount of cholesterol in the blood Loeper states, however, that the test has no value unless it is positive, in that case it may be helpful in distinguishing certain types of icterus If the test is negative, no conclusion may be reached, for various factors may intervene to maintain the cholesterol even though in excess in a soluble state For instance the previous injection of insulin prevents the reaction

The Supplementary Equipment of Third Class Railway Coaches as Units of Ambulance Train

During the recent war the war department was often confronted with the difficulty of securing an adequate number of freight cars that could be utilized in ambulance trains Accordingly the department has adopted a standard type of steel car utilizable under normal conditions as a third class coach, and equipped in advance with certain arrangements permitting it to be transformed rapidly into a unit of an ambulance train capable of transporting thirty wounded The coaches thus equipped remain the property of the railway companies The war department grants the railway companies an indemnity of 12 000 francs ($480) for each coach thus equipped The needs of the army medical department are estimated at 15 000 coaches, the construction of which will be distributed over a period of years In 1928, the sum of 605,200 francs will go to reimburse the railway companies for the installation of the described equipment

A Leprosarium in the Hôpital St. Louis, Paris

For some time past the service of Professor Jeanselme has centralized and interned all lepers encountered in the various hospitals of Paris Some of the lepers here are permanent inmates—almost all of them foreigners, with an occasional Frenchman who contracted the disease in the colonies There are about 200 lepers in Paris and its environs, and 500 more in the outside provinces The latter are grouped together in two well known centers, Var and Morbihan It was thought that the lepers in St Louis Hospital were not sufficiently isolated for the safety of the other patients, although not a single case of interior contagion has ever been reported from the hospital A special pavilion, rigorously isolated, will be constructed in one of the large courts of this immense hospital, the massive buildings of which date from the time of King Henry IV

POLAND

(From Our Regular Correspondent)

Dec 14, 1927

General Meeting of the Polish League for Combating Alcoholism

The general meeting of the Polish League for Combating Alcoholism was held, Sept 9, 1927, under the chairmanship of J Szymanski of Warsaw Two papers were presented, one by Father Galdynski on 'The Relation of Society in General to the Fight Against Alcoholism,' and another by Professor Gantkowski on "The Role of the Municipal and the Rural Governments in the Fight Against Alcoholism" Both papers dealt with very practical problems and awakened a lively discussion, which led to the passage of important resolutions As a part of the general management, in addition to the present members, Dr Dalbora of Posen and Director Namysla of Katowice were elected It was decided also to ask the leading societies now affiliated with the league to appoint each a representative to serve on the general management No changes were made in the composition of the committee on revision The president of the league explained the nature of the proposed antialcoholic legislation and urged all present to attend the seventh Polish Antialcoholism Congress that was to be held in Warsaw, Nov 12-14 1927

The substance of the main resolution was as follows 1 An appeal was made to all organizations for the advancement of social welfare, particularly those of a cultural and educational type, to make definite arrangements to enlighten their members on the subject of alcoholism, furthermore, to take action to exclude all alcoholic beverages from all entertainments and celebrations held under the auspices of such organizations, and in act word and deed to support the efforts of the antialcoholic organizations, particularly during the week appointed for the promotion of temperance propaganda 2 Furthermore all public welfare organizations were urged to develop effective measures to rescue and bring about the reformation of alcohol addicts to take energetic action to prevent the spread of the plague of alcoholism to take the necessary steps to found temperance clubs in all the towns and cities of the country, and to establish, at least in all the county seats, consultation centers on alcoholism 3 The authorities of all Polish cities were asked to found consultation centers for alcohol addicts after the model of the Posen consultation center, which operates under the name 'Municipal consultation center for matters pertaining to alcoholism, at the University Institute of Hygiene." 4. An appeal was addressed to all communes that through the creation and support of nonalcoholic inns, soft drink "parlors," and the like, they contribute in a rational way to the spread of temperance. 5. The congress expressed also the wish that the general management might establish railway lunch counters, municipal garden restaurants, and privately owned restaurants, which would dispense nonalcoholic beverages of good quality at reasonable prices.

Recognition of the Importance of the Dick Test

From the time of the beginning of the antiscarlatina activity in the fall of 1925 up to March 1, 1927, the State Institute of Hygiene, together with the Warsaw Department of Health, examined for susceptibility, by the Dick method, 23,657 children of Warsaw, most of them being school children aged 7 to 14. There were about 10,000 children who proved negative to the test. As was shown by a careful computation carried out on 9,708 children, the percentage of susceptible children in the public schools, including the kindergarten, ranged usually around 55; it was somewhat higher for children in the secondary schools (57) and rather lower for children of the poorer classes. For the period covered by the report (fourteen months), from Jan. 1, 1926, to March 1, 1927, 131 cases of scarlet fever were observed among children examined previously as to their susceptibility, and of that number there were 127 cases in children who gave a positive Dick reaction, and only four cases in children who gave a negative Dick reaction. Hence, whereas the relation of the susceptible to the nonsusceptible children was as 55 to 45, or 11 to 9, the relation of those becoming ill in these two groups was as 127 to 4, or 32 to 1. There is no doubt that in certain exceptional cases persons who present a negative skin reaction may come down with scarlet fever. Sometimes infection with scarlet fever occurring in Dick-negative children is associated with an apparent weakening of resistance due to other previous infective disease, for example, chickenpox. In other cases, again, the nonappearance of the skin reaction to the toxin probably does not depend, as it usually does, on the presence of antitoxin in the organism but on a certain inability of the skin to react to the toxin, as is known to take place in laboratory animals (Brokman and Sparrow). These are interesting reasons for research on the nature of the Dick reaction. However, from the epidemiologic point of view, it must be admitted that the recognition of the susceptibility and nonsusceptibility to scarlet fever with the aid of the Dick test is a sufficiently accurate and certain method on which to base the indications for active immunization (N. Gasiorowski).

Morbidity from Scarlet Fever

During the period from the time when vaccination was first begun in the fall of 1925 and extending up to March 1, 1927, a total of eighteen months, there were observed 160 cases of illness from scarlet fever in children protectively vaccinated with scarlatina toxin (the Dick vaccine) or with the toxin together with bacteria (the Gabryczewski vaccine), ninety-nine of which cases were in children who received the full dose of vaccine (3,500 skin test units) and sixty-one cases in children who did not receive the complete dosage. However, the percentage of children taken ill is considerably lower in the group vaccinated three times, receiving the complete dose of toxin, than in the group that did not complete the vaccination, or, instead of receiving 3,500 skin test doses, were given only the usual smaller dose of 500 skin test units, the primary vaccination, or 1,500 skin test units, the secondary vaccination. The influence of vaccination in lowering the percentage of children taken ill is established beyond all doubt. The percentage of illness among the vaccinated as well as among the nonvaccinated children is lowered with advancing age. The percentage of illness decreased with the amount of toxin administered. The group of vaccinated children gave three to four times less illness than the corresponding group of nonvaccinated children. The normal development of resistance appears to be accelerated under the influence of active immunization. A large number of abortive cases and a small number of complications point to the sure influence of vaccination on the course of the disease.

The Importance of Protective Inoculation Against Scarlet Fever

A report has been issued on the results of antiscarlatina vaccination in the region of Warsaw during the period beginning with the fall of 1925 and extending to March 1, 1927. The fall of 1926 brought a considerable aggravation of the scarlet fever epidemic throughout Poland. In Warsaw, the greatest visitation occurred during August, September and October. In December it began to subside and receded slowly. The incidence of the epidemic was almost three times as great as that of the previous year, giving rise in Warsaw, in 1926, to 4,640 cases, and, during January and February, 1927, to 447 cases, making a total of 5,087 cases during the fourteen month period extending up to March 1, 1927.

Antiscarlatina vaccinations on a wide scale were begun in Warsaw during the fall of 1925. They were first introduced in September by the State Institute of Hygiene, and, during the fore part of October, the Department of Health of Warsaw began to cooperate with the institute and developed in a short time a wide field of activity. A special vaccinating staff was appointed to assume the task of vaccinating all school children. During the course of two and a half months up to January, 1926, there were about 12,405 children of the public schools examined as to their susceptibility and vaccinated when found susceptible.

During the epidemic of the fall of 1925 the number of children vaccinated was still small, so that it is difficult to appraise the results. Only with the advent of the more extensive epidemic of 1926 could the question be answered as to whether the method as demonstrated by laboratory experiments and observed clinically would give practical results when applied to actual conditions in life, and as to whether the revival of the method by the Americans, on the strength of new discoveries in regard to Gabryczewski's conception, would give effectual protection against scarlet fever. By the fall of 1926, several thousand children had been vaccinated in Warsaw, and it is now possible to report further results. Omitting certain incongruities that it is impossible to avoid in any extensive statistical report, it is plainly evident that the appraisal of the results of the series of vaccinations is entirely satisfactory.

The figures of future reports will doubtless vary considerably from the present, owing to the fact that the method of protective vaccination against scarlet fever has been recently modified and improved. During the period covered by the report, the children were inoculated three times, receiving usually 3,500 skin test doses. In 1926, to the toxins there were added killed bacteria, and in certain cases a fourth vaccination was resorted to, by which the aggregate dose was increased to 6,500 skin test units. These doses are no longer given, for recent experiments with scarlatina antitoxin (Celarek) have shown that up to 20,000, and even 40,000, skin test doses may be given at one administration in the form of antitoxin, increasing in this manner the speed and the efficacy of the protection.

GENEVA

(From Our Regular Correspondent)

Jan. 26, 1928.

Surgery of the Sympathetic

The Revilliod-Julliard lecture was recently delivered to the Medical Society of Geneva by Prof. Rene Leriche of Strasbourg. His subject was "The Surgery of the Sympathetic and Its Results." The nervous mechanism of angina pectoris is always the same, no matter what may be the cause of the attack. A rational surgical treatment should aim to interrupt the ascending fibers. A study of one hundred operative cases of angina pectoris, ninety-four of which can be used in statistical analyses, shows that the attacks disappear in about 62 per cent of the cases. In most of these, attacks have been absent for more than three months, but a longer time is necessary before conclusions can be reached as to the permanence of the results. The few failures and most of the mortality (which is 13 per cent) are to be attributed to defective technic and to operations done in cases in which operation is not indicated.

Surgical treatment of angina pectoris does more than to suppress pain. The attacks, with all their symptoms, subside; the distress and retrosternal constriction disappear. In most cases the arterial pressure drops. This postoperative hypotension, which is a great help for the heart, is explained as the result of sympathectomy as well as the cessation of the attacks. The electrocardiogram reveals improvement in the cardiac function. Many patients have been able to return to their work.

A study of ninety-four cases of total sympathectomy shows results that are no better than those in the partial operation, and the mortality is far higher. It is not an indifferent matter to deprive the heart of its eccentric innervation; hence the stellate ganglion must not be removed.

Leriche divides the communicating ramifications of the inferior cervical ganglion and those of the intermediary ganglion, combined with sympathectomy above the inferior cervical ganglion and division of the vertebral nerve. To this may be added division of the upper communicating branches if, in a given case, the pain radiates to the head and neck. This was done in a recent case with immediate good results. Leriche's technic is delicate but not difficult; it is anatomically simple and can always be done with local anesthesia. Fourteen cases have been done without any notable incident arising.

Thoracoplasty

Drs. Piotet and Urech of Lausanne state that the first costal resections intended to compress tuberculous cavities were performed in that city in 1880, under the direction of the late Professor Cerenville. The procedure used in Switzerland known by the name of Roux's thoracoplasty distinctly differs from the French operation as devised by Professor Berard of Lyons and Sauerbruch's operation used in Germany. Roux's operation has the great advantage that it is carried out under the control of the eye and hand of the operator, while at the same time the muscles of the shoulder are left perfectly intact. The indications for the operation are very advanced unilateral pulmonary tuberculosis in which all other treatments (sanatorium and especially artificial pneumothorax) have failed. Of thirty-one patients operated on at the cantonal hospital, Lausanne (1920-1926), four died a few days after the operation, seven were lost sight of, while twenty were followed with these results: two deaths, one slight improvement, four distinct improvements, eleven marked ameliorations and two complete recoveries. These results furnish ground for hope of partial or complete recovery in certain desperate cases.

BELGIUM

(From Our Regular Correspondent)

Jan. 16, 1928.

The University of Louvain

In the previous letter an account was given of the celebration of the fifth centenary of the founding of the University of Louvain. Further historical data concerning the eminent faculties that have been recently so severely tried, and so generously succored (more particularly, by the United States), may be of interest. It was in 1425 that Pope Martin V established by a special bull, the three faculties of arts, law and medicine and that John IV, duke of Brabant turned over to the rector the jurisdiction of the university. The sixteenth century witnessed the long-drawn-out conflict between catholicism and protestantism, which latter faith, during this period, extended its limits rapidly, but against which the theologians of Louvain were able to contend successfully. Vesalius, the anatomist, whose name was the glory of the Faculte de medecine, and Justus Lipsius, the eminent humanist, were the men whose universal fame brought to Louvain so many teachers and so many pupils. In the seventeenth century, during the reign of Albert and Isabella, it was the faculty of law that attracted special attention, chiefly owing to the creation of its celebrated library. This was the period of the fierce struggles against Jansenism. Then came the upheavals associated with the French Revolution. The University of Louvain was suppressed in 1797, and was not reestablished at Louvain until 1835. After that date the prosperity that Belgium enjoyed until 1914 found its expression at Louvain in the flourishing of science and belles-lettres. To the age-old faculties of theology, philosophy, law, science and medicine have been added successively the special schools: the school of agriculture, the school of oriental studies, the historical seminary, the school of political and social sciences, the school of commercial and consular sciences, and the school for the study of colonial affairs. Since the armistice, the university has developed still further. The new cancer institute, the surgical institute, the university city so called, and the new hospital for the insane have been added.

The Ethics of an Auxiliary Consultation Office

In view of the present excess of physicians, the problem of physicians establishing an auxiliary consultation office is important. There are no legal objections in Belgium to a physician having more than one office of consultation in the country. The law did not foresee, however, the great distances that can now be rapidly covered in a day, and, consequently, it could not anticipate the creation of multiple practices such as are being developed in our times.

On the other hand, it is a question whether a physician should be prohibited from practicing in conformity with regularly established fee schedules, in various cities.

The International Bulletin, the Organ of the International Congress of Military Medicine and Military Pharmacy

At the fourth International Congress of Military Medicine and Pharmacy, held in Warsaw, in June, 1927 (The Journal, Aug. 13, 1927, p. 537), it was decided to establish an international bulletin, to be published during the intervals between the congresses, in the *Archives medicales belges*, and to be printed, for the present, in French and English, with a view to keeping up connections. The bulletin will contain each month: 1. An original article dealing with military medicine and military pharmacy. During the interval between the congresses each nation will furnish at least one of the articles. 2. A bibliographic index, containing titles or, possibly, brief abstracts, of articles with military significance written by military physicians and pharmacists, provided such articles deal with military medicine and military pharmacy

The editorial staff of the bulletin is composed of the permanent committee of the International Congress, to which national delegates will be added, one for each participating nation The secretary of the permanent committee will serve as the editor in chief The first number of the bulletin contains an article by Dr Bainbridge of New York, member of the permanent committee of the Congress of Military Medicine and Military Pharmacy, on the world-wide significance of the congress

Abnormal Types of Epidemic Encephalitis

Drs Van Bogaert and Ley presented recently before the Societe belge de neurologie a communication on the abnormal and obscure types of epidemic encephalitis of slow development The differentiation of these slowly developing types of encephalitis from other infectious syndromes involving the cerebrospinal axis is often difficult The distinction is especially difficult in case of an acute development of multiple sclerosis Examination of the cerebrospinal fluid does not throw light on the matter, however, a study of the curve of colloidal benzoin appears promising, especially if a series of tests is carried out It is negative in epidemic encephalitis Experimental diagnosis by intracerebral inoculation of the cerebrospinal fluid or of brain substance taken aseptically may lead to erroneous conclusions In certain instances, only the evolution of the syndrome reveals the avowed cases of multiple sclerosis The authors emphasized the difficulty of differentiating these types from true epidemic encephalitis They raised the question whether multiple sclerosis does not undergo a mutation similar to that of encephalitis, which seems to present varying aspects in different countries and following various epidemics

BERLIN

(From Our Regular Correspondent)

Feb 4, 1928

Demographic Statistics for Germany

The average length of life, which in most European countries during the decade from 1871 to 1880 was only from 35 to 40, but by 1900 had already risen to 45, attained, in 1900-1911, in the German empire, 49 years The rise still continues Denmark has reported averages of 54 9 for men and 57 9 for women (1906 1910) The general mortality has fallen in all highly civilized countries In Germany the total number of deaths dropped from 1,261,000 (30 6 per thousand) in 1872, with some fluctuations of the total, to 1,206,000 (22 5 per thousand) in 1897, and to 1,154,000 (18 1 per thousand) in 1909, the year in which, for the last time, more than two million births were recorded In the last normal year before the World War (1913) the number of deaths had dropped to 1,061,000 (15 8 per thousand) In recent years the decline has continued In 1923, 1924 and 1925 the total number of deaths was, respectively, 901,000 (14 6 per thousand), 802,000 (12 9 per thousand), and 788,000 (12 6 per thousand) The birth rates, however, tell a different story The birth rate increased up to 1901, since which year there has been a decline From 1872 to 1874 the total number of births ranged from 1,700,000 to 1,750,000, and from 1875 to 1890 the range was between 1,750,000 and 1,840,000 Between 1891 and 1897 it rose, with slight fluctuations, to 1,991,000 The decade from 1898 to 1909 showed the greatest annual totals of births, they run over two million Since 1909 the figures have again slowly declined to 1,874,000 in 1914 The rates resulting from the unusual conditions associated with the war and postwar periods, with the marked fluctuations, may be passed over The years 1923, 1924 and 1925 showed a more uniform picture, the total births in those years having been, respectively, 1,340,000, 1,314,000 and 1,335,000 If these figures are compared with those of the prewar period, it will be found that the total births have decreased abruptly, much more than the war losses in human life and the cession of the border territories in the East, West and North can justify This is shown also by the comparative figures, which reveal a slow decline in the birth rate from 40 plus per thousand population up to 1879, to 38 per thousand in 1888 (38 was reached again in 1891 and 1893) In 1899 the rate fell to 37 and in 1902 to 36 2 per thousand In 1906 a rate of 34 per thousand was attained for the last time, in 1908 the rate dropped to 33 Then the rate dropped abruptly to 27 6 during the second the last normal, quarter in 1914 From 1923 to 1925 the figures are fairly uniform 21 7, 21 1 and 21 3, respectively

Certain regions of the *reich* present a much worse showing The larger cities, for example, in spite of a high percentage of marriages, have only 14 2 living births per thousand of population, Berlin, indeed, has a birth rate of only 9 5 The rural sections are rapidly coming to follow the example of the larger cities and the upper classes The number of marriages per thousand of population has not changed materially since the beginning of the seventies of last century up to the present The figures of the war and postwar period are not *considered, they must be excluded in all such observations* Not until 1923-1924, after the financial depression brought on by the decline of the mark had been partially overcome, do we get figures that are in any wise comparable with prewar figures The proportion of marriages fluctuated, from 1874, the first normal year after the Franco Prussian war up to 1914, between 9 5 per thousand as the highest (1871) and 7 5 per thousand as the lowest figure (1879 1880, 1881) During the remaining years of the period from 1874 to 1914 the figures ranged between these records The first normal years after the war and the beginning of recovery from the financial crisis gave figures similar to those recorded for the prewar period 9 4 per thousand for 1923, 7 1 per thousand for 1924, and 7 7 per thousand for 1925

The excess of births over deaths has declined In 1898 the excess of births over deaths for the German empire was 15 6 per thousand population (the highest figure), the average figure for the period 1871-1880 was 11 9, for 1881-1890 11 7, for 1891-1900, 13 9, and for 1901-1910, 14 3 For 1913, the last normal year before the war, the excess of births over deaths was only 12 4 per thousand After the war came a transient increase in the excess of births, which was observed everywhere The excess of births over deaths in 1920 was 10 8 and in 1921 it rose even to 11 3 But even this peak of the postwar figures was under the figure for 1913 During the period from 1922 to 1925 the figures were fairly uniform ranging around 8 1 per thousand, as follows 8 5, 7 1 (height of the economic depression due to the decline of the mark) 8 2 and 8 7, respectively The birth rate and the death rate are both declining, but the birth rate is declining more rapidly than the death rate

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Marriages

Richard S Gill, West Palm Beach, Fla, to Miss Ruth Bowden of Midland, Ga, at Stuart, Fla, Dec 12, 1927

Joseph Bostick Liston to Miss Hazel Marion Smalley, both of Carlinville, Ill, January 14

William Henry Kraemer to Miss Caroline Robelen, both of Wilmington, Del, January 3

William E Browning to Miss Selma Kittleson both of Cledonia, Minn, in January

Benjamin B Morrow to Miss Rhoda M Welding, both of Spiceland, Ind, February 19

George L Richards, Fall River, Mass, to Miss Christine M MacLean, February 7

Deaths

Samuel Alexander Matthews, Chicago, University of Michigan Medical School Ann Arbor, 1895, professor and head of the department of physiology pharmacology and therapeutics, Loyola University School of Medicine, formerly assistant in pharmacology at his alma mater, assistant professor of experimental therapeutics, Rush Medical College, professor of physiology and experimental pharmacology, University of Kansas School of Medicine, Kansas City and professor of physiology and experimental pharmacology, University of Alabama School of Medicine, Tuscaloosa, aged 63, died February 19, at the Mercy Hospital, of angina pectoris and myocarditis

Galen Murray Woodcock ⊕ Bangor, Maine, Medical Department of the University of the City of New York, 1873, past president of the Maine Medical Association and the Penobscot County Medical Society at one time member and president of the state board of registration in medicine, for many years member and formerly president of the state board of health, on the staff of the Eastern Maine General Hospital, aged 75, died, February 17, of angina pectoris

Willis Allen McConkie, Cedar Rapids, Iowa, University of Michigan Medical School, Ann Arbor, 1889, member of the Iowa State Medical Society, formerly on the staff of St Luke's Methodist Hospital, aged 62, died, February 16, at Covington of fracture of the cervical vertebra, received in falling off a wall while going to see a patient

Charles Emory Pierce, Nashville, Tenn , University of Louisville (Ky) School of Medicine, 1911 member of the Missouri State Medical Association, on the staff of the Central State Hospital, aged 52, died, January 31 at the Vanderbilt Hospital, of complications following influenza

Joseph A Purtell ⊕ Milwaukee, Rush Medical College, Chicago, 1899, associate clinical professor of medicine, Marquette University School of Medicine, formerly professor of medicine, Milwaukee Medical College, aged 54, died, February 6, at the Misericordia Hospital, of pneumonia

William James Hurley ⊕ Chicago, Chicago College of Medicine and Surgery, 1908, formerly professor of surgery and clinical surgery at his alma mater, for many years on the staff of St Bernard's Hospital, aged 45, died, February 13, of chronic nephritis and myocarditis

Henry H Everett ⊕ Chicago University of Illinois College of Medicine, Chicago, 1902, instructor in laryngology and otology Rush Medical College, formerly on the staff of the Presbyterian Hospital where he died, February 17, of arteriosclerosis and nephritis, aged 61

Joseph Parker Baker ⊕ Findlay, Ohio, Starling Medical College, Columbus, 1890, formerly on the staff of the Home and Hospital of the City of Findlay, aged 63, died, February 14, of pulmonary edema, following metastatic carcinoma of the lungs

Augustine Alvin Mann, Central Falls, R I , Jefferson Medical College of Philadelphia, 1860, member of the Rhode Island Medical Society, Civil War veteran, for eighteen years member of the city council, aged 90, died, February 11, of myocarditis

Ptolemy O'Meara Edson, Boston University of Vermont College of Medicine, Burlington 1860 member of the Massachusetts Medical Society, Civil War veteran, for five years member of the school board, aged 94, died, February 13, of pneumonia

Pinckney D Shriner ⊕ Columbus, Ohio, Starling Medical College, Columbus, 1891 formerly president of the school board and city board of health, aged 58, died, February 18 at the Mercy Hospital, of myocarditis and chronic interstitial nephritis

Norman Francis Dorn, Los Angeles Medical Department of the University of Southern California Los Angeles, 1916 police surgeon, served during the World War, aged 35 died, January 31, at the Chase Sanitarium, of bronchopneumonia

William A Shufelt ⊕ New York, McGill University Faculty of Medicine Montreal, Que, Canada, 1881 on the staff of the Reconstruction Hospital, where he died, January 27 aged 70 of carcinoma of the bladder and bronchopneumonia

Jonathan B Carlile, Eldorado, Kan , Missouri Medical College St Louis, 1886, Civil War veteran, for many years a member of the state board of health, aged 83, died in January, at Leavenworth of pneumonia.

Clarice Johnston Parsons, Springfield, Mass , New York Medical College and Hospital for Women, 1894, on the staff of the Wesson Maternity Hospital, aged 62, died, February 15, of carcinoma of the uterus

Eugene Larue Vansant ⊕ Philadelphia, Jefferson Medical College of Philadelphia, 1884, member of the American Laryngological, Rhinological and Otological Society, aged 69, died, February 15, of heart disease

Frank McDowell Judson, Lyn, Ont, Canada, University of Toronto Faculty of Medicine, 1923, member of the Associated Anesthetists of the United States and Canada, aged 34, died, Nov 13, 1927, at Brockville

Charles Livingston Squire, Elmira, N Y Medical Department of Columbia College, New York, 1874, member of the Medical Society of the State of New York, aged 75, died, February 9, of septic arthritis

John William MacKenzie, Big Sandy Mont , Medical College of Indiana, Indianapolis, 1900, aged 47, died February 7, at the Montana Deaconess Hospital, Great Falls, following an operation for appendicitis

Joseph Poposkey, Grand Rapids, Mich College of Physicians and Surgeons Chicago, 1891, for four years a member of the city board of health, aged 64, died, February 3, of cerebral arteriosclerosis

Henry S Maloy, Milan, Ga Atlanta Medical College, 1895, member of the Medical Association of Georgia, aged 62, died, Nov 6, 1927, of acute dilatation of the heart and cerebral hemorrhage

John Tracy Edson, Staten Island N Y , Medical Department of Columbia College, New York, 1880, veteran of the Spanish-American War, aged 78, died, February 2, of cerebral hemorrhage

Alfred N Frame, Parkersburg, W Va , Indiana Medical College, Indianapolis, 1878, member of the West Virginia State Medical Association, aged 75, died, January 4 of angina pectoris

Steuben Douglas Angle, Portland, Pa , Northwestern Medical College, St Joseph, Mo, 1886 aged 76, was found dead, recently, of heart disease and suffocation, brought about by an oil stove

Claude Fenton Osborne, Hampton, Iowa, University of Illinois College of Medicine, Chicago 1900, member of the Iowa State Medical Society, aged 50, died, February 5, of heart disease

Joseph H Ringer, Jeannette, Pa , University of Pittsburgh School of Medicine, 1888, member of the Medical Society of the State of Pennsylvania, aged 74, died, Nov 29, 1927, of myocarditis

T F Stevenson, Hickory, N C Louisville (Ky) Medical College 1893, member of the Medical Association of the State of North Carolina, aged 59, died, January 31, of angina pectoris

Walter Prevost Glendon ⊕ Bridgeton, N J , Jefferson Medical College of Philadelphia, 1886, on the staff of the Bridgeton Hospital, where he died, February 14, of sinusitis, aged 62

Samuel Mathers Barnes, Los Angeles, State University of Iowa College of Medicine, Iowa City, 1872 aged 81, died, in February, of chronic myocarditis, nephritis and asthma

John Edward Beale ⊕ Lemoyne, Pa , Medico-Chirurgical College of Philadelphia 1907, aged 51, died, January 23, at the Harrisburg (Pa) Hospital, of carcinoma of the stomach

Anna D Gloss, Peking China, Northwestern University Woman's Medical School, Chicago 1885, medical missionary in China, aged 66, died February 23 at Pasadena, Calif

Willard M Burleson, Grand Rapids, Mich , Saginaw Valley Medical College, 1899 aged 59, died suddenly, February 13, of acute dilatation of the heart and chronic myocarditis

Thomas N Rogers, Monrovia Calif , Victoria University Medical Department Toronto, Ont Canada, 1889, aged 67, died, Oct 2, 1927 at Los Angeles of angina pectoris

Willis C Kinner ⊕ Columbus, Ohio, Medical College of Ohio, Cincinnati, 1900, aged 53, died, February 14 at the Mount Carmel Hospital, of carcinoma of the kidney

Claude A Smith ⊕ Pittsburg Kan , Barnes Medical College St Louis, 1899, on the staff of the Mount Carmel Hospital, aged 58, died February 1, of angina pectoris

Tom V Williams ⊕ New Castle, Pa , College of Physicians and Surgeons, Baltimore, 1892 member of the American Roentgen Ray Society, aged 65, died Dec 21, 1927

Thomas T McNish, New Brighton Pa , Homeopathic Hospital College Cleveland, 1885 Civil War veteran aged 78, died, February 1, of a self-inflicted bullet wound

Benjamin Chapman Goodwin, Buckner Va , Medical College of Virginia Richmond 1865, aged 85, died January 18, of pneumonia, following a cerebral hemorrhage

Anthony Rud ⊕ Chicago, Chicago Medical College 1891 on the staff of the West Suburban Hospital aged 65, died, February 23, at Orlando, Fla of myocarditis

German Baxter Miller, Lexington Ky , College of Physicians and Surgeons, Baltimore, 1882 aged 75, died, January 20, at the Stokes Sanitarium, Louisville

Alexander P Waterfield, Union City, Tenn , University of Nashville Medical Department, 1858, Civil War veteran, aged 93 died, February 7, of heart disease

DeWitt Talmadge Byrom, El Paso Texas, Tulane University of Louisiana School of Medicine New Orleans, 1922, aged 31, died Nov 4, 1927, of tuberculosis

Carl W Rutledge ⊕ Indianapolis, Medical College of Indiana, Indianapolis, 1903, aged 48, died, February 17, at St Vincent's Hospital, of pneumonia

Joseph Bird Fitzpatrick, Killeen Texas, University of Louisville (Ky) School of Medicine, 1881, aged 67, died, Dec 19, 1927, of cerebral hemorrhage

Edward Francis Duggan ⊕ Valley Stream N Y , Long Island College Hospital, Brooklyn 1893, aged 61, died suddenly, February 16, of heart disease

William H Renois, East St. Louis, Ill University of Vermont College of Medicine, Burlington, 1866, aged 83, died, January 31, at St Mary's Hospital

Edward Everett Mackenzie, Baltimore University of Maryland School of Medicine, Baltimore, 1884 aged 70, died, February 11, of angina pectoris

William B McCoy, Coffey Mo Starling Medical College Columbus Ohio, 1897, aged 71, died, January 16, at Laclede, of chronic interstitial nephritis

Edgar Clement ⊕ Haddonfield N J , Hahnemann Medical College and Hospital of Philadelphia, 1898, aged 61, died, February 13, of myocarditis

William E Woodrow, Monticello Ky Hospital College of Medicine, Louisville, 1898, aged 60 died, in January, at Louisville, of heart disease

Albert Ross Burgess ⊕ Wichita, Kan , University of Illinois College of Medicine, Chicago, 1905, aged 48, died January 30, in a local hospital

Charles Lewis Finley, Caldwell, Ohio, Hospital College of Medicine, Louisville, 1907, aged 43 died February 15, of carcinoma of the throat

Everett Lewis Emmons ⊕ Detroit Detroit College of Medicine and Surgery 1893, aged 58, died February 24, of cerebral hemorrhage

Frederick Colton Hood, Toronto Ont , Canada Trinity Medical College, Toronto, 1885, L R C P , London England, 1886, died, Nov 15, 1927

Henri Albert Blagdon, Montreal, Que Canada, Laval University Faculty of Medicine, Quebec, 1913, aged 40, died suddenly, Nov 18, 1927

Algernon Eugene Bennett, Westerville Ohio Eclectic Medical Institute, Cincinnati, 1899, aged 71, died, February 17, of paralysis

William Francis Fairchild, Flora, Ill Louisville (Ky) Medical College, 1890 aged 65, died suddenly, February 3, of heart disease

David K. Allinder, Atascadero Calif , University of Maryland School of Medicine, Baltimore, 1880, aged 82, died, January 21

Arthur C Lee, Detroit, Detroit College of Medicine and Surgery, 1893 aged 59, died suddenly February 6 of heart disease

J Horace Chartier, Montreal, Que Canada, University of Montreal Faculty of Medicine, 1888, aged 63, died, Dec 5, 1927

Marion Brown Lodeman, Ludlowville, N Y (nongraduate), aged 72, died, Nov 17, 1927 of cerebral hemorrhage

Alexander Campbell, St Vincent Minn Eclectic Medical Institute, Cincinnati, 1881, aged 88 died January 17

William C Wolf, Colorado Springs, Colo , Chicago Medical College, 1879, aged 74, died, January 25, of meningitis

Bureau of Investigation

THE VIT-O-NET QUACKERY

Making a "Cure-All" of an Electric Heating Pad

Credulity moves in waves and quackery rides on the crest of the wave The 1927-1928 brand of medical humbug is Magnetism with a capital 'M ' The vogue was probably started by the arch quack of the century Albert Abrams who conducted his scheme through low-grade physicians and osteopaths Gaylord Wilshire worked the other side of the street—the public With his magic horse collar I-On-A-Co Wilshire persuaded the gullible to pay over $50 for $4 worth of electric bell wire purchased in the belief that it would magnetize the iron in the blood! Wilshire s previous experience as a high-pressure salesman in the real estate and gold-mine-stock industries made him irresistible as a plausible quack and his business flourished exceedingly In the nature of the case imitators arose, and a dozen or more magic horse collars under as many names are bidding for the easy money of those who seek health via the magnetic route

A concern known as the Vit-O-Net Corporation (previously the Vit-O-Net Manufacturing Company) and having headquarters in Chicago puts out a large sized electric heating pad or blanket It sell for $102 50 As an expensive means of applying heat conveniently and continuously, the "Vit-O-Net may have a place in the cosmic scheme The concern that exploits it evidently realizes that for one person that would buy its device as a heating pad there are fifty who will buy it as a cure for whatever ails them This probably is the explanation of the Vit-O-Net concern s selling its heating pad as a 'patent medicine

A few weeks ago a large display advertisement was published, signed by the president of the William H Rankin Company an advertising agency The advertisement had for its heading in large black faced type 'Are you the Man for this Exceptional Opportunity ? and the opening paragraph of the advertisement read

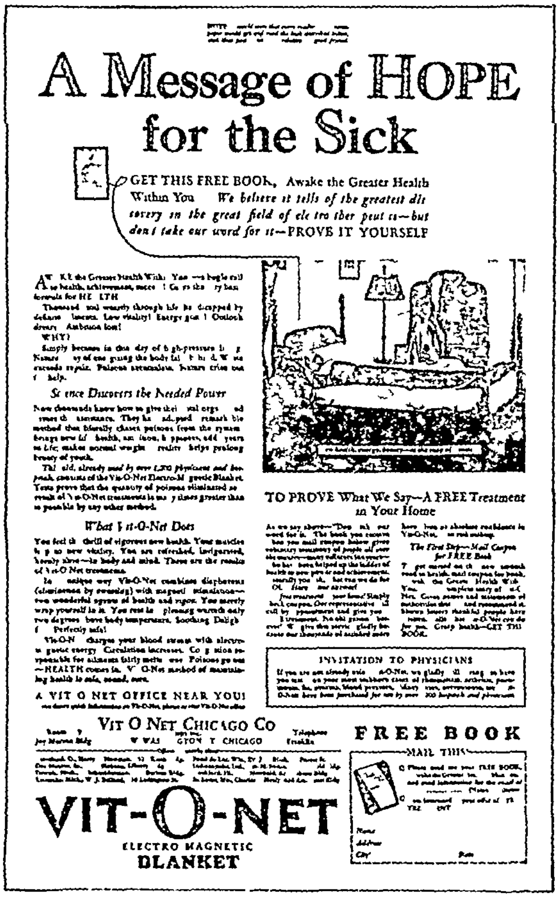
> 'There is about to be placed on the market in a large way the GREATEST DISCOVERY in the rapidly growing field of ELECTRO MAGNETIC THERAPY Over fifteen years of constant effort has been devoted to perfecting this device and *results attained from its use in thousands of cases have been so astounding as to be almost unbelievable*

The advertisement stated, further that to men 'with outstanding personality energy, education executive and selling experience' the concern that had this great discovery in electro-magnetic therapy offered a lifetime connection that would positively lead to complete financial independence Those who answered the Rankin advertisement received a letter from the Vit-O-Net concern stating that the William H Rankin Company had referred the inquiry to it The inquirers were told to fill in a rather elaborate application blank and mail it to the Vit-O-Net concern by special delivery, and they would be notified whether the Vit-O-Net concern wished them to report for attendance at the 'sales school'

A little ancient history regarding the Vit-O-Net concern is of interest During 1922 the Vit-O-Net Manufacturing Company carried conservative advertisements of their electric heating pad in THE JOURNAL Early in 1923 the company ceased advertising in THE JOURNAL because they failed to get the returns they had anticipated

In April, 1923 the Vit-O-Net concern was advertising that the "Mayo Brothers Colonial Hospital' at Rochester, Minnesota, was using seven blankets Investigation brought out the fact that the Mayo Brothers did not operate in the Colonial Hospital had no stock or interest in it in any way shape or manner, and that the use of their names was entirely unauthorized The Colonial Hospital is owned by the Kahler Corporation, which when the matter was brought to its attention immediately notified the Vit-O-Net Corporation, under date of May 4 1923 that all advertising matter of the Vit-O-Net concern in which the name of the Colonial Hospital was used must be discontinued at once, and that the name was not to be used in any of the Vit-O-Net advertising matter hereafter This was in 1923 Today—March, 1928—the Vit-O Net concern is using as part of its "come-on" literature, a photographic reproduction of a letter on the stationery of the Colonial Hospital, signed "Glenn Phelps, Manager,' and dated May 6, 1924, stating that the Colonial Hospital is using several of the Vit-O-Net blankets Mr Phelps letter was addressed to *Hospital Management* of Chicago, a publication which, apparently, has worked rather closely with the Vit-O-Net concern, as a number of the pieces of Vit O-Net advertising consist of reproductions of letters sent to *Hospital Management,* in answer to an inquiry from that publication regarding this electric heating pad

It is but fair to state that the letter from the Colonial Hospital was entirely noncommittal and to the effect, only, that the hospital used these heating pads and found them satisfactory In addition the Vit-O-Net agents are again peddling the falsehood—verbally—that "the Mayo Bros are using their device Letters from such widely separated places as Riverside, Calif, and St Louis, Mo, report that this claim is being made


A Message of HOPE for the Sick

GET THIS FREE BOOK, Awake the Greater Health Within You *We believe it tells of the greatest discovery in the great field of electrotherapeutics—but don't take our word for it*—PROVE IT YOURSELF

Science Discovers the Needed Power

What Vit-O-Net Does

A VIT O NET OFFICE NEAR YOU!

TO PROVE What We Say—A FREE Treatment in Your Home

The First Step—Mail Coupon for FREE Book

INVITATION TO PHYSICIANS

VIT O NET CHICAGO CO

W WASHINGTON ST CHICAGO

VIT-O-NET
ELECTRO MAGNETIC
BLANKET

FREE BOOK

MAIL THIS

Name
Address
City State

Miniature reproduction of a five column display advertisement of Vit O Net that appeared in the Chicago Herald and Examiner Feb 20 1928

As part of its present advertising campaign, the Vit-O Net concern is using photographic reproductions of letters from various other hospitals None of these letters from reputable institutions even remotely suggest that the Vit-O-Net device has any magnetic or electric qualities The letters are used however to give an air of respectability to what might otherwise be considered a discreditable piece of quackery Some hospitals from which these letters came, and the persons signing the letters, follow

Milwaukee (W s) Johnston Emergency Hospital by E B Callender R N
Mary s Help Hospital (San Francisco) by Sister Zoe
Jewish Maternity Hospital (New York City) unsigned
Woman s Hospital (New York City) by James U Norris Superintendent
Columbus (Ohio) Radium Hospital by Frances Berhurst Superintendent
Jamestown (N Y) General Hospital by M Robert Superintendent
Michael Reese Hospital (Chicago) by Dora C Saunby R N
Maternity Hospital (Cleveland), by Calvin MacDonald

These are but a few of the hospitals whose noncommit letters are being used as an asset to quackery in the exploi tion of Vit-O-Net In addition, the concern is also usi photostatic copies of letters that have been addressed eith to the William H Rankin Company or to the "Good Heal Research Department" of that company, by a motley arr of chiropractors and osteopaths The concern even goes far as to reproduce photographically an order from tl Rockefeller Institute for Medical Research, dated November 6, 1924 This order called for one electrical blanket pu chased from the Vit-O-Net Manufacturing Company

One of the Vit-O-Net booklets is of the usual testimonia type It contains a two page statement, entitled, "Experiences with the Vit-O-Net System of Treatment," which i credited to 'Dr Ralph Shadduck" Shadduck, according tc commercial reports, has for some time been connected wit the company as an officer or an employee A careful search fails to show that Shadduck was ever graduated by any reputable medical school or is licensed to practice medicine in any state in the Union

Another article in the same booklet is credited to 'Dr Otis J Briggs" and deals with the "Therapeutic Value of Vit O Net" Otis J Briggs was "dean" of the fake concern known as the "College of Drugless Physicians" of Indianapolis In June, 1927, Briggs was arrested on a charge of conspiracy to commit a felony in connection with the issuance of fraudulent diplomas, and was reported to have confessed that he had issued a number of fraudulent diplomas for "Doctors of Naturopathy" In issuing these fake diplomas, Briggs dated them back, so that the purchasers thereof might be licensed without examination Briggs is not a physician but a chiropractor and the founder and president of the "American Drugless Association", he seems to have been connected with various fakish schemes

From the testimonials and claims made by the exploiters it appears that the Vit O-Net blanket cures cancer, arthritis, Bright's disease, eczema, neuritis, paralysis, anemia, low blood pressure, high blood pressure, goiter, epilepsy, asthma, prostatic trouble, deafness, and various other conditions In a Vit-O-Net booklet, "The Power of Electro-Magnetism," being distributed a few weeks ago, we read

> It remained for the Vit-o Net Mfg Co to concentrate these magnetic waves in the Vit O Net Electro Magnetic Blanket so that such energy will enter the human body magnetize the elements in the blood and tissues A vibratory action is produced in the deepest organs stirring every cell into activity increasing metabolism and hastening the elimination of waste products

That the Vit-O-Net blanket will magnetize the elements in the blood and tissues is, of course, a fantastic conception Equally ridiculous is the claim that it produces a vibratory action in the 'deepest organs"

> When a human body is enveloped in the Vit O Net Electro Magnetic Blanket a gentle vibratory action takes place throughout the system Every cell is stimulated by these magnetic waves resting tired nerves repairing broken down tissue and eliminating toxins through the pores and other waste channels

Here, again, are falsehoods The Vit-O-Net produces no vibratory action through the system and the cells are not stimulated by magnetic waves

> Obesity has been reduced from 2 to 5 lbs per day Because the treatment is natural and stimulating no weakening effects follow Vit O Net dissolves unnecessary fat only—it does not reduce the person of normal weight or underweight On the contrary because it enables the cells to take on nourishment it will assist one underweight to return to normal

Truly a marvel of discrimination! If you are too fat, the Vit-O-Net blanket, in some esoteric way, "dissolves" your unnecessary fat, if you are too thin, the same blanket, by means equally occult, causes you to take on weight!

> At the suggestion of a noted San Francisco scientist the Vit O Net Electro Magnetic Blanket was thoroughly tested by the E R A system which is recognized by thousands of physicians These tests showed startling evidence of a definite radio emanation of energy from the blanket

Here is a definite hook-up between this heating pad and the preposterous hokum of Albert Abrams From the paragraph just quoted, it is noted that, in addition to the blanket's alleged vibratory and magnetic virtues and its power to take off or put on fat, it also has a "radio emanation"!

> When you are wrapped in the Blanket your body with the exception of the head is entirely surrounded by a current of electricity You are in a magnetic field (Faraday s law) With 15,000 feet of magnet wire contained in the Vit O Net considerable magnetism is generated The metallic salts in the blood being an excellent conductor the entire blood stream *a moving body* becomes charged with magnetic energy

Here is a crude twisting of facts and fiction It is true that, when one is wrapped in a Vit O-Net blanket that is plugged into an electric light socket, the body is surrounded by a current of electricity It is equally true that one is in a magnetic field This may impress the ignorant but it doesn t mean anything One may also be entirely surrounded by a current of electricity when he rides in the lowly street car, and every one on this terrestrial globe is constantly immersed in a magnetic field, owing to the magnetism of the earth That the "metallic salts in the blood" become charged with magnetic energy is plain buncombe

Summed up, it can be said that the Vit-O-Net blanket is a convenient and expensive way of applying continuous heat to the body Further than this one cannot truthfully go The curative value of the Vit-O-Net blanket is that of heat which differs not at all from that developed from a hot water *bottle or of a hot brick wrapped in a sock!*

Correspondence

MEASLES

To the Editor —In the editorial on measles (The Journal, February 18) it stated that "many well qualified investigators have failed to obtain positive blood cultures [of the green producing coccus as described by Ruth Tunnicliff] in early measles cases" In view of this statement it should be noted that Duval and Hibbard (Hibbard, R J, and Duval, C W Studies upon the Virus of Measles, *Proc Soc Exper Biol & Med* **23** 853 1926 Duval, C W, and Hibbard, R J Further Studies upon the Etiology of Measles, ibid **24** 519 1927) isolated in cultures from the blood, unfiltered as well as filtered, of all of six patients in the active eruptive stage of measles a coccus in every way similar to the one obtained by Tunnicliff Small amounts of the cultures of this coccus were injected intravenously in rabbits which developed typical "pyrexial and leukocytic reactions" after an incubation of from five to twelve days Filtrates of cultures of the coccus failed to produce any such reactions In other words, Duval and Hibbard's results are directly confirmatory of the results obtained by Tunnicliff

Ludvig Hektoen, M D, Chicago

VASECTOMY FOR THE PREVENTION OF OPERATIVE EPIDIDYMITIS

To the Editor —This measure has attained general approval as a preliminary to prostatectomy, its success proves the assumption that such infection of the epididymis is an extension from a prior infection of the corresponding seminal vesicle Now this vesiculitis is of course not abolished by occlusion of the vas, its persistence may cause frequent and painful urination—a veritable "prostatisme sans prostate' , and such toxemia as has at times compelled urologists, e g, Thomson-Walker—to remove the vesicles subsequent to prostatectomy Such toxemia may be an unrecognized factor in some operative deaths

Now the minor operative procedure necessary to occlude the vas, whether vasectomy or vas ligation, permits the injection of mercurochrome or other solution through the vas into the vesicles Here it remains for days, being gradually pumped into the prostatic urethra and bladder, as the coloring of the urine shows This measure goes far toward averting not only epididymitis but vesiculitis as well, or if the latter already exists, toward abolishing the infection in the vesicle *This filling of the vesicle adds nothing objectionable* to vasectomy but protects the patient from vesiculitis, which is potentially more dangerous than epididymitis Its value, demonstrated by urologists, warrants its consideration by surgeons

William T Belfield, M D, Chicago

USE OF VENOUS SPACES OF PENIS FOR TRANSFUSION

To the Editor —The article by Dr E K Shaw on the use of the venous spaces of the penis for transfusion (The Journal, February 11) was read with interest

During the winter of 1918-1919 at the Camp Grant Illinois Base Hospital, in the great campaign of purification of a large fraction of the colored contingent of the army before its return to the quiet pursuits of civilian existence, we came across one large soldier who apparently had no superficial veins according to the examination of several officers The writer, then a first lieutenant in the medical corps, suggested to his captain, Oscar W King, now of around Houston, that we "shoot" this particular darky through the dorsal vein of the penis In the presence of a large gallery of willing corps boys and sympathetic patients, the operation was successfully performed by the captain

The news spread through the lower reaches of the camp like wildfire. On the next day and ever after, our patients were exceptionally well behaved

George H Stacy, M D, Peoria, Ill
Major, M C, U S Army

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed Every letter must contain the writer s name and address but these will be omitted on request

EPINEPHRINE AND EPHEDRINE IN RELATION TO BLOOD PRESSURE AND PERTUSSIS

To the Editor —Is the action of epinephrine hydrochloride on the cardiovascular system similar to the action of ephedrine sulphate, namely that both stimulate the heart muscle to contract and that both stimulate the arterial musculature to contract thereby raising the blood pressure? What are the contraindications of ephedrine sulphate? Can it be used to relax the diaphragm in spasms of whooping cough?

J Ralph DeCesare, M D Brooklyn

Answer.—The action of ephedrine on the circulation is different from that of epinephrine While the latter is a powerful heart stimulant, ephedrine is a direct depressant to *the heart, though this effect is generally not evident in* individuals with normal circulation, excepting after large doses A heart that has been depressed by continued low blood pressure is so sensitive to the depressant action of ephedrine that the poor condition of the circulation may be aggravated by it It is also much feebler as a vasoconstrictor than is epinephrine Hence, as a circulatory stimulant, ephedrine has been a disappointment Indeed, profound circulatory depression should be considered as one of the contraindications to this drug Its tendency to produce insomnia, at times, might contraindicate administration at bedtime, especially in those subject to sleeplessness A dose of a hypnotic will, however, overcome this objection It may produce or aggravate cardiac palpitation, tremor headache sweating and nausea It has a tendency to produce albuminuria, as a result, it is believed, of vasoconstriction rather than direct injury to the kidney tissue Irritability of the urinary bladder is liable to be caused by it, especially in patients with an hypertrophied prostate Simultaneous administration of atropine may overcome many of these undesirable results Hence these conditions are relative rather than absolute contraindications to ephedrine

W D Anderson and C E Homan, Jr, reported some success in the treatment of whooping cough with ephedrine hydrochloride (*Am J M Sc* **174** 738 [Dec] 1927)

OPERATION ON DEVIATED NASAL SEPTUM

To the Editor —After total removal of the septum for badly deviated septum what is the effect on breathing, aeration of the lungs structure and anatomy of the nose? Are there any serious effects? Please omit name
M D Ohio

Answer —Despite the most careful operation, septal resection often results in a perforation If the opening is small, a disagreeable whistling often occurs which annoys the patient Another disadvantage of the perforation is the fact that crusting is likely to ensue on the edges of the wound, causing considerable obstruction to breathing, and when the crusts are removed, bleeding sometimes occurs The late Professor Fein of Vienna suggested many years ago that it would be just as well to remove a large portion of the septum, as it is well known that a large opening does not have the disadvantage of either the crusting or the whistling As to the effect on the breathing and the aeration of the lungs, it is not likely that the removal of a large portion of the septum will produce undesirable results However, when a complete septal resection is done, sufficient cartilage must be left anteriorly to support the tip of the nose Otherwise external deformity may result

CHEMICALS USED IN WATER SOFTENERS

To the Editor —Kindly inform me what chemical is used in the water softeners now in general use such as the Duro and one also sold by Crane & Company Does this water have any deleterious effect on the system?
John C Farrell M D Arlington Minn

Answer —The water softeners referred to operate, according to our understanding, through the use of a zeolite, or on what is chemically termed the exchange silicate" idea The effect of such softening is the almost complete removal of the calcium and magnesium constituents of the water, regardless of the form in which it exists in the original water, and in their place is left a similar sodium salt From the standpoint of domestic use, such treatment makes the water soft and not particularly objectionable save from a possible corrosive tendency which is somewhat increased

INCOMPATIBILITY IN PRESCRIPTION

To the Editor —I am in the habit of prescribing the following formula

	Gm or Cc
Sodium bicarbonate	6
Syrup of Rhubarb Aromatic	
F E Cascara	
Sagrada, Aromatic	aa 50

I inadvertently omitted aromatic from the cascara on the prescription and the pharmacist tells me that effervescence took place violently Can you explain the incompatibility? The original prescription does not effervesce Please omit name
M D Wisconsin

Answer —The A M A Chemical Laboratory reports that the fluidextract of cascara sagrada U S P X contains soluble acid resins, as would be expected, this solution when added to sodium bicarbonate effervesces In case of aromatic fluidextract of cascara sagrada U S P, the resins have been previously neutralized with calcium oxide and magnesium oxide, the object of the latter is to destroy the bitter taste (incidentally, the aromatic form is much less effective) Using the aromatic fluidextract, there is, therefore, no reaction with sodium bicarbonate

RELATIVE SAFETY OF SEDATIVE DRUGS

To the Editor —Could you tell me the relative safety of sulphonal trional luminal veronal and allonal? These drugs are used by various men and I should like to know what you consider the best one to give as a hypnotic I would appreciate any information regarding their toxicity Please omit name
M D St Paul Minn

Answer —Sulphonmethane (sulphonal) and sulphonethylmethane (trional) have to a large extent been superseded by phenobarbital (luminal) and barbital (veronal), especially because the sulphonmethanes are apt to make the patient drowsy the day after the ingestion, and are liable to produce an alteration in the blood which manifests itself by hematoporphyrinuria, a condition in which dark red or almost black urine is passed For these reasons it was not considered wise to use these substances for more than a few days at a time

Barbital is a relatively safe but feeble hypnotic which may be preferred to all others when a mild effect suffices, as in nervous insomnia

Phenobarbital is a much more potent drug It is one of the most reliable and powerful hypnotics and is safe when given in a dose of from 0 1 to 0 2 Gm, which may be considered an ordinarily maximum dose It is contraindicated in the presence of marked asthenia, no matter what its cause, as well as in nephritis

Allonal is a mixture of a barbituric acid derivative similar to barbital and of amidopyrine, the latter increases the analgesic tendency of the former, so that it is more likely to produce sleep in the presence of pain than hypnotics alone

BASE FOR OINTMENTS

To the Editor —Would you kindly publish a formula for base in the mixing of ointments which is nongreasy and highly penetrating? I should like a nonirritating greaseless penetrating and quickly absorbed base for ointments Please omit name
M D, Lynn Mass

Answer —There is no such formula as the one desired Unfortunately, the specifications are mutually exclusive Only fats or fat solvents penetrate the skin, and, as all fat solvents are irritating, these would be excluded from consideration Thus, a well made rose water ointment (cold cream) of official type is about as penetrating and nonirrita tive a preparation as may be designed The so-called greaseless cold creams, on the other hand, are in reality nothing but stearate soaps and, like all soaps, are somewhat irritative Still, a so-called vanishing cream may most nearly fill the requirements Such a preparation may be made according to the following formula

	Gm or Cc
Stearic acid	50 0
Oleic acid	10 0
Potassium hydroxide	2 5
Distilled water	200 0

Perfume as desired 1 cc (more or less)

Melt the stearic acid in a dish on a water bath, heated to a temperature of 85 C Dissolve the alkali in the water warm the solution to 85 C and gradually pour the warm solution into the melted acid, stirring briskly Continue the same temperature and active stirring for ten minutes to insure a complete saponification and absence of free alkali Then remove the heat but continue stirring until cold, at the same time incorporating the perfume The cream should afterward be beaten for several hours, preferably by mechanical means, and then placed in jars or tubes

EPONYMS IN CARDIOLOGY

To the Editor —In following the study of the cardiograms names and terms are applied which as a general rule are somewhat unfamiliar even to many of the teachers of heart diseases as for example 1 The structural mass of neuromuscular tissue between the right auricle and the superior vena cava is known as the sino auricular node Why is this called the Keith Flack node? Who were these investigators and where did they operate? 2 The specialized bundle or nerve tissue emanating from this node and extending over both right and left septums of the heart is described as the A V or auriculoventricular node or bundle of His Who was His and where and at what time did he demonstrate the presence of this bundle of nerve fibers in the heart? 3 This bundle of His proceeds as right and left strands and divides into a syncytial network or arborization (branching like a tree) over both the right and left ventricles and is described as the Purkinje fibers Again who was or who is Purkinje? Where is he doing this investigation? At what school or university?
M D Chicago

Answer —The use of personal names to indicate anatomic structures or diseases is confusing and rarely justifiable It is interesting that Keith and Flack should state in one of the articles in question "We believe that neither the bundle nor any other structure in the human body requires a personal name for its proper designation"

1 Arthur Keith at that time lecturer in anatomy at the London Hospital Medical College, and Martin Flack, at the same time assistant demonstrator in physiology at the same institution, described in the *Journal of Anatomy and Physiology* in 1907 the node at the junction of the superior vena cava and the right auricle which bears their name

2 The history of the auriculoventricular node and bundle really begins in 1883 with Gaskell, who showed that the impulses passed to the ventricle by spreading over the muscular connections between the auricle and ventricle

A F Stanley Kent described the auriculoventricular bundle in the *Journal of Physiology* in 1893, but did not work it out as completely as it was later worked out in the same year by William His, Jr, who was at that time professor of anatomy at Leipzig He showed more definitely that there was muscular continuity, and subjected it to experimental proof

S Tawara, in 1906 published a monograph more thoroughly describing the tissue and its function, and it is also referred to by his name as the node of Tawara Later in the same year Keith and Flack confirmed his results, with some additional observations

3 Johannes Purkinje was a Bohemian physiologist and anatomist born in 1787 He died in 1869 He was a friend of Goethe and a very active investigator, making an unusual number of contributions to our knowledge of anatomy and physiology In 1839 when he described the fibers which bear his name he was professor of physiology and pathology at Breslau, where he was the founder of laboratory training for students Because of his personality as well as his ability as an investigator and teacher, he exerted a great influence on the German science and teaching of his time

The article of Keith and Flack describing the node, and the later article confirming the work of Tawara, should be read

Keith Arthur and Flack Martin The Form and Nature of the Muscular Connections Between the Primary Divisions of the Vertebrate Heart *J Anat & Physiol* **41** 172 1907

Keith Arthur and Flack, Martin The Auriculoventricular Bundle of the Human Heart Lancet **2** 359, 1906

CARDIAC ASTHMA

To the Editor —Please discuss the physiology of 'cardiac asthma and recommend treatment both of the attack and for the prevention of future attacks Please omit name

M D Indiana

ANWSER —"Cardiac asthma" is a general term used to designate dyspnea or hyperpnea consequent on such varying pathologic changes that it is impossible to discuss the physiology or the treatment in any specific way The first step toward understanding the physiology or formulating any plan for treatment is to know just what is the underlying pathologic condition in the heart and in the kidneys as well To attempt to discuss any one phase would be only misleading Cardiac asthma might be cardiac syphilis or coronary disease, or some phase of cardiorenal disease, or one of several other conditions Treatment should be based on the pathologic condition Where this is in doubt or indeterminable, one is perfectly safe in trying some theobromine salt and other symptomatic treatments

DIAGNOSIS OF HALITOSIS

To the Editor —A patient complains greatly of halitosis which I have never been able to detect Friends tell her about it frequently I can find no cause for it The teeth are in excellent repair A good nose and throat man says that the sinuses and throat are normal there is no sign of tuberculosis bronchiectasis or cavitation in lung The history of the patient reveals occasional biliousness and an approach to migraine Constipation is not a prominent symptom but occasionally the tongue is coated Typhoid occurred when the patient was 2 years of age and influenza seven years before I saw her Where else may I look? Please omit name

M D Pennsylvania

ANSWER.—In these days of halitosis advertising propaganda, the idea of an entirely psychic halitosis—a neurasthenic phobia—must be entertained, though the history of occasional "biliousness" should focus attention on the alimentary tract A roentgen-ray examination may reveal colon stasis, possibly incompetence of the ileocecal valve, with enterotoxicosis in spite of daily bowel evacuation A largely vegetarian diet and laxative regimen may correct such a disturbance A test meal and stool examination may reveal deviations from the normal

SILVER ARSPHENAMINE IN MULTIPLE SCLEROSIS

To the Editor —Would you kindly advise me concerning the status of silver arsphenamine as a treatment of multiple sclerosis?

JOHN M HIGGINS M D New York

ANSWER —Silver arsphenamine and other arsenicals of this type have been administered in the treatment of multiple sclerosis on the basis of reports that a spirochete has been found in the tissues and that one successful inoculation of an animal with the disease had been accomplished These results have not been confirmed by other observers The results of arsphenamine treatment are extremely difficult to estimate as remissions are of frequent occurrence in the course of this disease even without treatment The differential diagnosis between multiple sclerosis and disseminated syphilis of the nervous system is by no means always easy, for this reason many clinicians advise treatment of all patients showing signs of multiple sclerosis with arsphenamines Improvements that have been reported have been said to differ from spontaneous remissions in certain respects, though this is not clear Ill effects have not been reported as a result of the treatment

BISODOL

To the Editor —A New York physician highly recommended to his patients a certain product called bisodol which is put up by the Bisodol Company 1926 Broadway New York As I was questioned several times by physicians as well as pharmacists regarding the composition of this so-called remedy I looked in vain through your valuable books New and Nonofficial Remedies the Propaganda for Reform and also Nostrums and Quackery So if you could give me the desired information I would appreciate this very much

WILLIAM J KOCH pharmacist New York.

ANSWER —The advertising of the "BiSoDol Company" states that BiSoDol is composed of 'Bismuth Subnit —Magnes Carb —Sodium Bicarb —Carica Papaya—Diastase—Ol Menth-Pip' but contains no information in regard to the amount of each ingredient which is claimed to be present The Council on Pharmacy and Chemistry has not examined the preparation nor has the A M A Chemical Laboratory considered it worth while to analyze this "shotgun' mixture In an article 'Medical Credulity and Proprietary Medicines," M Irving Sparks, M A M B, of the Department of Pharmacology, University of Toronto, discusses a proprietary product which seems to be similar to 'BiSoDol It is stated in regard to the substance under discussion "We believe that in ordinary practice it would be found that adequate effects could be produced by a mixture of magnesium carbonate and sodium bicarbonate in equal parts, the proportions in this preparation are about ten to twelve, flavored with a minim of oil of peppermint or even a little less, for an ounce of powder Any dispenser can readily rub either of these powders in a mortar with oil of peppermint and distribute the oil throughout the mixture"

EXAMINATION AND TREATMENT IN STERILITY

To the Editor —1 If in course of investigation of sterility one finds the vaginal and cervical secretions hostile to a husband s normal sperm what course of treatment is instituted to correct this? 2 If one finds abnormal sperm in a husband namely inactive and few in number what course of treatment is recommended? I should like specific dietary instructions 3 In artificial insemination does one attempt to introduce sperm directly into the uterus or just into the cervix? Please omit name

M D New Jersey

ANSWER —1 It is reported that adverse conditions of the vaginal and cervical secretions have been ameliorated by tampons carrying yeast or emulsions of *Bacillus bulgaricus*

2 Occasionally the number and activity of spermatozoa are raised by massage of the prostate and vesicles and medical diathermy of the testes

3 In artificial insemination it is considered best to deposit the sperm into the uterine cavity

A recent article on this subject, which contains additional information, is the following

Kurzrok Raphael and Miller E G Jr Biochemical Studies of Human Semen and Its Relation to Mucus of the Cervix Uteri *Am J Obst & Gynec* **15** 56 (Jan) 1928

INFECTED CYSTIC TUMOR

To the Editor —A man aged 47 whose weight was 165 pounds (75 Kg) and height 5 feet 8 inches (173 cm) and whose health was good had a mild case of gallbladder infection four and a half years ago with little trouble now from that source About two months ago he noticed a small tumor in the left cheek about the size of a small white soup bean located about where the buccal nerve branches to supply the upper and lower lips The tumor gradually enlarged to about three times its original size and protruded slightly so as to be noticeable externally A young surgeon who was consulted diagnosed it as a fibroma and recommended surgical treatment He also stated that removal of the tumor would entail possible paralysis from injuring the nerve and that if this did occur the patient could smile only on one side Several weeks later the tumor became more pointed and yellow capped I removed this cap and drained out some pus It has healed over and reduced two thirds in size in two weeks and I had hopes of its disappearing entirely Now it is again noticeable externally and is slowly enlarging it is about the size of a white soup bean and very hard What would you advise? Please omit name

M D Ark.

ANSWER —This is quite likely a cystic tumor with a superimposed pus infection, which subsided only to be followed by reaccumulation of its cystic contents The diminution in size following drainage suggests this In such a location the cyst could be a dermoid, although a sebaceous cyst is of much more common occurrence

In its location between the lower fibers of the facial nerve, care must be exercised in enucleation, since injury to the fibers at this level will produce weakness or paralysis of one side of the mouth On the other hand, a benign tumor displaces but does not infiltrate the nerve, and with reasonable care a blunt dissection will enable one to remove the cyst wall without injury to the nerve This should be done before another inflammatory reaction occurs, because of the additional scar tissue and the added difficulty under such conditions of obtaining a clean plane of cleavage

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FORMULA FOR SHIVE SOLUTION — PHYTOPHARMACOLOGIC WORK

To the Editor —Will you kindly give me the formula for Shive solution as used by D I Macht?

F S S Michigan

Answer —The solution employed by D I Macht (The Journal Sept 3, 1927, p 753) was the so-called Shive solution, which contains calcium nitrate, magnesium sulphate, and monopotassium acid phosphate (Shive *Physiol Rev* **1** 327 1915) Such a solution was prepared by mixing 10 4 cc of 0 5 molar solution of calcium nitrate, 30 cc of 0 5 molar solution of magnesium sulphate, and 36 cc of 0 5 molar monopotassium acid phosphate with distilled water sufficient to make 1 liter The normal growth of the lupine rootlets was studied by immersing the seedlings in a mixture of normal Shive solution with an equal part of distilled water The effect of cocaine and other drugs was studied by dissolving chemicals in distilled water and mixing such drug solutions with equal parts of the normal Shive solution" (Macht, D I, and Livingston, M B Effect of Cocaine on the Growth of Lupinus Albus A Contribution to the Comparative Pharmacology of Animal and Plant Protoplasm, *J Gen Physiol* May 20, 1922, p 573) According to a communication from Dr Macht, in working along phytopharmacologic lines it is necessary for the investigator to have sufficient training in the methods not only of animal pharmacology and physiology but also of botany and plant physiology This is especially true in regard to the preparation of the seed and germination and raising of the seedlings The Shive solution is only a part of the technic and reagents required For very accurate work, hard glass test tubes should be used and seedlings which are quite healthy and nearly of the same length should be selected in order to detect fine differences As in all new scientific procedures experience is the greatest teacher, and failure in obtaining satisfactory growth or other results should not discourage the beginner

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POTASSIUM THIOCYANATE IN HYPERTENSION

To the Editor —In The Journal January 14 page 82 there is an article by Lester T Gager with a note on sulphocyanate therapy I should like to know the toxicity of this drug and whether or not there are any cumulative effects from it when used in the grain and a half dosage as advised in the article I have a case of hypertension that shows essential hypertension as the superficial arteries of the arm seem very flexible and the urine is negative with a concentration up to 1 020 The patient responds very nicely to nitroglycerin in connection with a salt free diet and rest in bed with graduated exercise However the patient seems to depend on the nitroglycerin and at times the effects of it are very transient and if persisted in after the pressure is reduced to 160/110 there seems to be a little discomfort which I attribute to the nitroglycerin The highest pressure has been 250/130 so there seems to be a discrepancy in the reduction of the diastolic pressure There is a definite tachycardia when the pressure is very high but the pulse rate is 70 when the pressure is around 160 It seems to me that this is an ideal case in which to try the sulphocyanate if there is an increase in the patient s comfort with the decrease in the blood pressure However as my chemically pure potassium sulphocyanate is labeled with such a glaring poison sign I cannot help but be a little timid in experimenting with it although I feel that a depressant is clearly indicated in this case and nitroglycerin while prompt in its actions does result in a certain amount of discomfort when used persistently

H D Allen Jr Milledgeville Ga

Answer —This letter was referred to Dr Leslie T Gager, who writes

'I have used potassium thiocyanate (potassium sulphocyanate) in the dosage and according to the schedule indicated in my article without evidence of toxic effect I recommend no larger doses than 1½ grains (0 1 Gm) given three times a day, for one or two weeks and then gradually reduced Larger doses are apt to produce too abrupt a fall in blood pressure Like the iodides, thiocyanate may produce a drug rash, which is unimportant except for the itching and appearance In my experience the thiocyanate has a slower but much more lasting effect than have the nitrites or glyceryl trinitrate (nitroglycerin) '

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

Arkansas Little Rock May 9 10 Sec, Reg Bd Dr J W Walker, Fayetteville Sec, Homeo Bd Dr A A Pringle Eureka Springs Sec Eclectic Bd Dr C E Laws 803½ Garrison Ave Fort Smith

Colorado Denver, April 3 Sec, Dr Philip Work 324 Metropolitan Bldg Denver

Connecticut Hartford March 13 14 Sec, Reg Bd, Dr Robert L Rowley 79 Elm St, Hartford Homeo Bd New Haven, March 13 Sec Dr Edwin C M Hall, 82 Grand Ave New Haven

District of Columbia Washington April 10 Sec Dr Edgar P Copeland Suite 110 1801 Eye St Washington

Hawaii Honolulu April 9 12 Sec, Dr James A Morgan Room 18 Young Bldg Honolulu

Idaho Boise April 3 Commissioner of Law Enforcement Hon. F E Lukens Boise

Illinois Chicago April 10 12 Supt of Reg Mr V C Michels Springfield

Louisiana New Orleans May 1 Sec Homeo Bd Dr F H Hardenstein 830 Canal St New Orleans

Maine Portland March 13 14 Sec, Dr Adam P Leighton Jr, 192 State St, Portland

Massachusetts Boston March 13 15 Sec Dr Frank M Vaughan 144 State House Boston

Minnesota Minneapolis April 17 19 Sec Reg Bd Dr A E. Comstock 524 Lowry Bldg St Paul Basic Science examinations April 3 Sec Basic Science Bd Dr E T Bell U of Minnesota Minneapolis

Montana Helena April 3 5 Sec, Dr S A Cooney, Power Bldg, Helena

Nevada Carson City May 7 9 Sec Dr Edw E Hamer Carson City

New Mexico Santa Fe April 9 10 Sec Dr Wm T Joyner Roswell

Oklahoma Oklahoma City March 13 14 Sec Dr J M Byrum Shawnee

Rhode Island Providence April 5 6 Sec Dr B U Richards State House Providence

Wisconsin Madison March 17 Sec, Basic Science Bd Prof M F Guyer U of Wisconsin

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California October Examination

Dr Charles B Pinkham, secretary of the Board of Medical Examiners of the State of California, reports the written examination held at Sacramento, Oct 18-20, 1927 The examination covered 9 subjects and included 90 questions An average of 75 per cent was required to pass Of the 41 candidates examined, 36 passed and 5 failed Forty-three candidates were licensed by reciprocity and 4 were licensed by endorsement of their credentials The following colleges were represented

College PASSED	Year Grad	Per Cent
Stanford University School of Medicine	(1927)	85 6 87
University of California Medical School	(1927)	86 2 86 4 87 8
Northwestern University Medical School	(1927)	78 9 80 81 9 87 6
Rush Medical College	(1927)	80 3 82 1 82 9 83 1
University of Illinois College of Medicine	(1927)	84 6 85 2 87 4
University of Kansas School of Medicine	(1927)	78
Johns Hopkins University School of Medicine	(1925)	83 7
Harvard University Medical School	(1925) 89 3 (1927)	87 3 93 3
St Louis University School of Medicine	(1927)	75 1 86 7
Creighton University School of Medicine	(1927)	76 7
University of Nebraska College of Medicine	(1927)	82
Cornell University Medical College	(1927)	80 8 86 9
University of Cincinnati College of Medicine	(1927)	86 2
University of Oregon Medical School	(1927)	80 1
Hahnemann Med Coll and Hosp of Philadel, Homeo	(1926)	84 6
Jefferson Medical College of Philadelphia	(1923)	87
University of Pennsylvania School of Medicine	(1926)	81 1
Medical College of Virginia	(1917)	75 2
Licentiate of the Royal College of Physicians London and the Royal College of Surgeons England	(1925)	81
University of Leningrad Russia	(1922)†	77
University of Moscow Russia	(1907)†	86 8

College FAILED	Year Grad	Per Cent
Howard University School of Medicine	(1921)	‡
University of Buffalo School of Medicine	(1926)	71
University of Rome Italy	(1916)	64 2
University of Tomsk Siberia Russia	(1895)† 64 9 (1916)†	64 4

College LICENSED BY RECIPROCITY	Year Grad	Reciprocity with
University of Colorado School of Medicine	(1919) (1926)	Colorado
Emory University School of Medicine	(1926)	Georgia
Illinois Medical College Chicago	(1905)	Alabama
Jenner Medical College Chicago	(1913)	Illinois
Loyola University School of Medicine	(1916)	Illinois
Northwestern Univ Med School	(1906) Montana (1922)	Illinois
University of Illinois College of Medicine	(1907)	Illinois
State Univ of Iowa College of Homeopathic Med	(1913)	Iowa
State Univ of Iowa Coll of Med	(1907) (1920) (1925 2)	Iowa
Harvard University Medical School	(1925)	Ohio
University of Michigan Medical School	(1906)	Oregon
University of Minnesota Medical School	(1921)	Minnesota
Barnes Medical College St Louis	(1910)	Iowa
Kansas City Hahnemann Medical College	(1903)	Florida
St Louis Univ School of Med	(1922) Missouri (1925)	Montana

University Medical College of Kansas City	(1906)	Missouri
Washington Univ School of Med (1894) Missouri	(1925)	Michigan
Creighton University School of Medicine	(1916)	Nebraska
University of Nebraska College of Medicine (1919)	(1921)	Nebraska
New York Medical College and Hospital for Women Homeopathic New York City	(1916)	New York
Cleveland Homeopathic Medical College	(1904)	Ohio
University of Cincinnati College of Medicine	(1927)	Ohio
Univ of Oklahoma School of Med. (1922) New York,	(1926)	Oklahoma
University of Oregon Medical School	(1925)	Oregon
Jefferson Medical College of Philadelphia	(1905)	Penna
(1908) Washington (1921) Ohio Utah		
University of Pennsylvania School of Medicine	(1914)	Terr Haw
Meharry Medical College	(1919)	Georgia
University of Tennessee College of Medicine	(1925)	Tennessee
McGill University Faculty of Medicine (1902)	(1906)	New York
(1923) Ohio		

ENDORSEMENT OF CREDENTIALS

College	Year Grad	Endorsement with
George Washington University Medical School	(1905)	U S Navy
University of Michigan Medical School	(1904)	U S Army
Washington University School of Medicine	(1925)	U S Navy
Jefferson Medical College of Philadelphia	(1926)	U S P H S

* This candidate will receive his M D degree on the completion of one year s internship in a hospital

† Verification of graduation in process

‡ Grade not given

Nebraska October Examination

Mr Lincoln Frost, secretary of the Nebraska Board of Medical Examiners, reports the written examination held at Lincoln, Oct 31-Nov 2, 1927 The examination covered 10 subjects and included 80 questions An average of 75 per cent was required to pass Eight candidates were examined, all of whom passed The following colleges were represented

PASSED

College	Year Grad	Per Cent
University of Arkansas School of Medicine	(1925)	81 8
Rush Medical College	(1927)	81 7
State University of Iowa College of Medicine	(1922)	79 8
Tufts College Medical School	(1906)	82 1
Creighton University School of Medicine	(1927)	83 8
University of Nebraska College of Med (1924) 81 6	(1926)	82 4
University of Oklahoma School of Medicine	(1926)	81 3

Mr Frost also reports that 1 physician was licensed after the special examination held at Lincoln, Oct 15, 1927

PASSED

College	Year Grad	Per Cent
University of Nebraska College of Medicine	(1927)	84 3

Colorado July Examination

Dr Philip Work, secretary of the Colorado State Board of Medical Examiners, reports the written examination held at Denver, July 5, 1927 The examination covered 8 subjects and included 80 questions An average of 75 per cent was required to pass Of the 74 candidates examined, 46, including 3 osteopaths and 2 undergraduates, passed, and 28 candidates, including 2 osteopaths and 3 undergraduates, failed Nine candidates were licensed by reciprocity and 1 candidate was licensed by endorsement of his credentials The following colleges were represented

PASSED

College	Year Grad	Per Cent
Stanford University School of Medicine	(1927)	88 6*
University of Colorado School of Med	(1927)	79 79 3 79 4 80 3
80 5 81 3, 82 82 5 83 83 6 84 3 84 4 84 4 84 6		
84 6 84 6 85 1 85 6 86 1 86 6 87 6 88 5 88 8 89 3		
Northwestern University Medical School	(1927)	76 6
Rush Medical College	(1927)	84 6 * 87 4*
Physio Medical College of Indiana Indianapolis	(1898)	78
Johns Hopkins University School of Medicine	(1916)	89 7
College of Physicians and Surgeons Boston	(1925)	83 2
Ensworth Medical College St Joseph	(1897)	80
Kansas City College of Medicine and Surgery	(1927)	82 4
Kansas City University of Physicians and Surgeons	(1924)	81 5
(1926) 75 9 (1927) 80 7 81 4		
St Louis College of Physicians and Surgeons	(1924)	75
(1925) 75 1 (1927) 76 79 2		
Osteopaths	80 81 7	85 4
Undergraduates	78 2	85 1

FAILED

College	Year Grad	Per Cent
Kansas City College of Physicians and Surgeons	(1921)	53
(1922) 37 5 (1923) 51 8 (1927) 58 63 4 70 8		
Kansas City University of Physicians and Surgeons	(1926)	69 4,
(1927) 32 3 65 3 65 6 68 1		
St Louis Coll of Physicians and Surgeons (1921) 72	(1922)	59 2
(1923) 59 5 66 1 (1925) 34 7 (1926) 60 6 71 7,		
(1927) 59 8 72 2 73 3		
Medical College Sun Ville, China	(1920)†	49 7
University of Kharkov Russia	(1894)‡	§
Osteopaths	62 3	66 1
Undergraduates	42 1 69 4	71 4

LICENSED BY RECIPROCITY

College	Year Grad	Reciprocity with
Chicago Homeopathic Medical College	(1883)	Illinois
Kansas Medical College Topeka	(1902)	China
University of Louisville School of Medicine	(1880)	Missouri
University of Michigan Medical School	(1925)	Indiana
St Louis University School of Medicine	(1924)	Illinois
University Medical College of Kansas City	(1908)	Missouri
University of Nebraska College of Medicine (1924)	(1926)	Nebraska
Trinity Medical College Toronto	(1901)	Nebraska

ENDORSEMENT OF CREDENTIALS

Harvard University Medical School	(1923)	N B M Ex

* This candidate will receive his M D degree on the completion of one year s internship in a hospital

‡ Verification of graduation in process

§ No grade given

† No record of medical school

Book Notices

MOSQUITO REDUCTION AND MALARIAL PREVENTION A Precis By J A Crawford M B Ch B Capt R A M C Officer in Charge Anti Malarial Measures Colaba Military Area and B S Chalam L R C P & S, L R F P & S Officer in Charge Anti Malarial Measures Bombay Reclamation Scheme Cloth Price $1 75 Pp 102 with illustrations New York Oxford University Press 1926

The authors of this small but excellent book write from the point of view of officers actually in charge of antimalarial work Consequently, as might be expected, the book is practical They write, "It has been our experience that the manager of a tea garden, or a malarial inspector, or the N C O in charge of a sanitary squad dealing with antimalarial measures begins to take a much keener interest in his work when he has acquired some knowledge of the habits and life-history of the mosquito’ They give in nontechnical language, the information necessary to the acquirement of this knowledge The chapter on the habits of mosquitoes, however, shows where the mosquito may be found and where it breeds—not in general terms, but in detail The following chapter, on preventive work demonstrates the methods of offense and defense against the three links necessary for the chain of malarial infection Practical difficulties are named and met, useful tables are printed Although especially valuable in India, the book could be used as a field guide anywhere that mosquito work is to be done The more exhaustive works on the subject frequently do not meet the needs of the field worker, this book does meet them

ANATOMISCHE UNTERSUCHUNGEN UBER DIE TUBERKULOSE DER OBEREN LUFTWEGE Von Dr Paul Manasse o o Professor an der Universitat und Vorstand der Klinik für Ohren Nasen und Kehlkopfkranke in Würzburg Band III Die Tuberkulose und ihre Grenzgebiete in Einzel darstellungen Beihefte zu den Beitragen zur Klinik der Tuberkulose und spezifischen Tuberkuloseforschung Herausgegeben von L Brauer und H Ulrici Paper Price 9 90 marks Pp 101 with 62 illustrations Berlin Julius Springer 1927

This is a study of the pathologic-anatomic observations in tuberculosis of the upper respiratory passages It is part of an apparently large and ambitious study of tuberculosis and its borderline implications and is a tribute to the energy that possesses our German colleagues in medicine The pathologic conditions are discussed under the conventional headings of infiltration, ulceration perichondritis and tuberculoma The illustrations are numerous and excellent There are a number of fine photographs of specimens and some good colored plates

DICTIONARY OF BACTERIOLOGICAL EQUIVALENTS — FRENCH ENGLISH GERMAN ENGLISH ITALIAN ENGLISH SPANISH ENGLISH By William Partridge F I C Joint Public Analyst for the County of Dorset and the Boroughs of Poole and Penzance Cloth Price $4 Pp 141 Baltimore Williams & Wilkins Company 1927

This polyglot dictionary of bacteriologic equivalents will be most thankfully received by English speaking scientists, librarians, bibliographers and abstracters throughout the world Many are the hours and the headaches it will save, for, as the compiler writes in his preface, "Certain foreign words offer apparently obvious translations, but it must be remembered that it is often of great value to establish beyond all possible doubt that the 'guessable' meaning is the correct one" Truly, and authorities in the flesh are rare and irritable and equivalents in the literature are far to seek Mr Partridge has verified his translations by references to corroborative sources The book contains the English equivalents of bacteriologic terms in the following numbers French, about 2,400, German, about 2,600, Italian, about 1 200, and Spanish, about 1,600

The Meningiomas Arising from the Olfactory Groove and Their Removal by the Aid of Electro Surgery By Harvey Cushing C B D S M A M Professor of Surgery in Harvard University Paper Pp 53 with 28 illustrations Glasgow Jackson Wylie & Company 1927

Surgery boasts of no more definite stylist than Cushing and this applies to his literary compositions as well as to his surgical technic This small monograph is the second Macewen memorial lecture It tells superbly the story of Cushing s personal surgical experiences with the olfactory groove meningiomas In it is emphasized the place which he believes the use of electrosurgical methods will come to occupy in the field of neurologic surgery There is no question that it is an important addition to the neurologic surgeon s armamentarium Its greatest influence will be felt, however when it can be successfully employed in the surgical removal of the gliomas At present all such electrosurgical methods seem to have proved disappointing

A Elementary Laboratory Guide in General Bacteriology By Harold J Conn Soil Bacteriologist New York Agricultural Experiment Station Cloth Price $3 Pp 165 with 27 illustrations Baltimore Williams & Wilkins Company 1927

This is a laboratory guide to accompany a textbook written by the author The guide is intended to serve only introductory classes and the laboratory exercises are therefore elementary These include the preparation of mediums water and milk examination, pure culture work, and studies on yeasts molds soil bacteria and a few pathogenic organisms Exercises in immunology deal with the Widal test and the complement fixation reaction Great care has been taken to insure successful experiments by the student through detailed directions

I capillari nel bambino Por Gino Frontali Paper Price 12 lire Pp 88 with illustrations Bologna L Cappelli 1927

This is a study of the capillaries of the living child as to microscopic appearance resistance permeability and pressure These topics are first discussed as they concern the normal child and then are taken up the same conditions as encountered in many of the commoner diseases of children The monograph is a valuable contribution though as the author himself states in his concluding paragraph much remains to be done before knowledge of this subject is full or accurate One wonders why in the rather extensive bibliography the name of Krogh is not found

Practical Otology By Morris Levine M D Associate Professor of Otology New York Post Graduate Medical School and Hospital Cloth Price $5 50 Pp 387 with 148 illustrations Philadelphia Lea & Febiger 1927

In this excellent book Dr Levine gives a comprehensive account of his lectures embodying clinical observations and the importance of careful and thoroughly understood treatment The chapters on anatomy and physiology are admirably succinct and clear and his illustrations in point are usually apposite and interesting The original illustrations and three colored plates deserve especial mention The author's reference to Wittmaach s extensive contribution to otology on pneumatization of the mastoid is so briefly touched on that the reader is left with a confused idea The book is complete on treatment reviewing in good form the zinc ionization treatment for chronic suppurative otitis media Included with this is the use of quartz light therapy diathermy roentgen rays and radium The application of vaccines and foreign proteins in otology is reviewed as well as blood transfusion Although the book is modern in every respect the author does not include Tobey s test for increase of spinal fluid pressure in connection with his chapter on sinus thrombosis It is a good book for the student of otology and can be recommended to the graduate student as well as the general practitioner

Diagnostik und Therapie der Kinderkrankheiten mit speziellen Arzneiverordnungen fur das Kindesalter Ein Wegweiser fur den praktischen Arzt Von Prof Dr F Lust Direktor des Kinderkrankenhauses in Karlsruhe Fifth edition Paper Price 10 50 marks Pp 573 Berlin Urban & Schwarzenberg 1927

This edition (autumn, 1927) has followed so quickly after the fourth (spring, 1926) that only a few chapters of the book have been altered, among others those on diabetes and tuberculosis The author thoroughly reviews the literature of the past year concerning diagnosis and therapy, and incorporates in this edition those additions which he from his personal experience believes are sound

This is essentially a practical book for the pediatrician and especially the general practitioner doing some pediatrics Although the title indicates a book on diagnosis and treatment, the emphasis is predominately on treatment The first part of the book is divided into two sections, 343 pages are devoted to the outline diagnosis and detailed treatment of the various infants' and children s diseases according to the group of organs affected such as the heart and blood vessels glands of internal secretions, and skin The second section, of thirty pages describes therapeutic technic, such as methods of blood transfusions, baths, breathing exercises and inhalations The second part of the book is also divided into two sections The first 107 pages of which is a miniature pediatric pharmacopeia and is a valuable portion of the book Virtually all the practical drugs are listed, with their synonyms, physical properties, uses, dosages and antidotes Besides giving general rules for the dosages in four groups —infants, children from 2 to 5 years, children from 6 to 12, and adults—he also gives the maximum dose for adults If a drug cannot be used for infants, the dosage for this group is omitted The preparations of certain infant foods such as the butter flour mixture and albumin milk, are described The second section of the second part, comprising about twenty pages, is devoted to a classification and description of sanatoriums for children in various parts of Europe, giving the location season number of beds and physicians in charge This portion of the book is of interest only to the German physician

The book is a manual of therapy not for the undergraduate student but for the practicing physician Its chief advantage over somewhat similar works is that, after noting in the first part of the book what drugs to use in a certain condition one may ascertain the exact dosage of such drugs for definite ages in the second portion of the book The book is popular among American physicians taking postgraduate courses in pediatrics in Europe The price is reasonable, in view of the amount of information contained

A Study in Tubercle Virus Polymorphism and the Treatment of Tuberculosis and Lupus with Oleum Allii By William C Minchin M D Third edition Cloth Pp 110 with illustrations London Bailliere Tindall & Cox 1927

This book contains in utterly unscientific presentation, a rediscovery of Much s granules apparently not differentiated from artefacts, and vague theories about bacterial mutation, ending up with conclusions such as It may even turn out that such diseases as syphilis glanders, cancer, and tuberculosis are also forms of alternate generation" The second part of the book gives the simple recipe for a treatment of tuberculosis with oil of garlic, successful cure guaranteed within two months, even in far advanced cases

The Injection Treatment of Varicose Veins By A H Douthwaite M D M R C P Second edition Paper Price 3/ net Pp 43 London H K Lewis & Company Ltd 1928

The subject of this little book is more and more attracting the attention of physicians In 1927, Dr Douthwaite extended a periodical article of his into a small, readable volume In about half a year there was a demand for another edition The second edition therefore, cannot differ greatly from the first The author has however 'attempted to bring the contents up to date with any fresh developments in this branch of therapeutics, particularly with reference to the treatment of ulcers, and to published complications which have followed treatment"

Books Received

Books received are acknowledged in this column and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender Selections will be made for more extensive review in the interests of our readers and as space permits Books listed in this department are not available for lending Any information concerning them will be supplied on request

An Introduction to the Theory and Use of the Microscope By C R Marshall, M A M D LL D Professor of Materia Medica and Therapeutics in the University of Aberdeen, and H D Griffith B A Carnegie Teaching Fellow in Natural Philosophy in the University of Aberdeen Boards Price 3/6 net Pp 90 with 32 illustrations London George Routledge & Sons, Ltd , 1928

The details of the use of this most valuable accessory to medical practice

Food Infections and Food Intoxications By Samuel Reed Damon A M Ph D Associate Professor of Bacteriology the Johns Hopkins University School of Hygiene and Public Health Cloth Price $4 Pp 266 with illustrations Baltimore Williams & Wilkins Company, 1928

Detailed knowledge in a field in which much new knowledge is available

Allen s Commercial Organic Analysis A Treatise on the Properties Modes of Analysis and Proximate Analytical Examination of the Various Organic Chemicals and Products Employed in the Arts Manufactures Medicine etc with Concise Methods for the Detection and Estimation of Their Impurities Adulterations and Products of Decomposition Volume VI Colorimetry, Dyes and Colouring Matters the Synthetic Dyestuffs, and the Analysis of Colouring Matters Edited by Samuel S Sadtler, S B Elbert C Lathrop A B Ph D , and C Ainsworth Mitchell M A F I C Fifth edition Cloth Price $7 50 Pp 658 with illustrations Philadelphia P Blakiston s Son & Company 1928

The De Lamar Lectures 1926 1927 of the School of Hygiene and Public Health Johns Hopkins University By F Neufeld Alfred E Cohn George H F Nuttall Edward Francis William H Park Alphonse R Dochez Veranus A Moore Edgar L Collis Earle B Phelps Marshall A Barber Cloth Price $5 Pp 223 with illustrations Baltimore Williams & Wilkins Company 1928

I A Method for Estimating the Potency of Smallpox Vaccine By John N Force and James P Leake II The Immunological Relationship of Alastrim and Mild Smallpox By James P Leake and John N Force Treasury Department Hygienic Laboratory Bulletin No 149 Paper Price 35 cents Pp 64 with 29 illustrations Washington Government Printing Office, 1927

L architecture cellulaire normale de l écorce cérébrale Par le Dr Constantin v Economo professeur de psychiatrie et de neurologie a l Universite de Vienne Édition française par le Dr Ludo van Bogaert, agrege a l Universite Libre de Bruxelles Paper Price 80 francs Pp 183, with 61 illustrations Paris Masson & Cie 1927

Travaux et mémoires Tome II Amyotrophie Charcot Marie Heredo ataxie cerébelleuse Les lacunaires Travaux divers sur l encephale Infections et maladies nerveuses Maladies de la moelle varia Par Pierre Marie Paper Price 30 francs Pp 393 with illustrations Paris Masson & Cie 1928

Principes de pharmacodynamie Constitutions chimiques proprietes physiologiques Par L Hugounenq professeur a la Faculte de medecine de Lyon et G Florence professeur agrege a la Faculte de medecine de Lyon Paper Price 40 francs Pp 390 with illustrations Paris Masson & Cie, 1928

Radiologie clinique du tube digestif Publiee sous la direction de MM Pierre Duval, J Ch Roux H Beclere I Estomac et duodenum Par Pierre Duval, Jean Charles Roux et Henri Beclere Cloth Price 265 francs Pp 333 with illustrations and 87 plates Paris Masson & Cie 1927

On Rous Leucotic and Allied Tumours in the Fowl A Study in Malignancy By J P McGowan, M A B Sc M D Pathologist to the Rowett Research Institute Aberdeen Cloth Price 10 shillings net Pp 99 with 21 illustrations London H K Lewis & Company, Ltd 1928

Was kann und wann muss der praktische Arzt operieren? Von Richard Mühsam, Prof Dr med aerztlicher Direktor des Rudolf Virchow Krankenhauses in Berlin Paper Price 5 marks Pp 118 Leipsic Georg Thieme 1928

Die Behandlung der Cystitis Pyelitis und der Nierensteinerkrankung Von Leopold Casper, Geh San Rat a o Professor an der Universität Berlin Paper Price 3 60 marks Pp 79 Leipsic Georg Thieme 1928

Report of the Medical Research Council for the Year 1926 1927 Paper Price 3s net Pp 152 London His Majesty s Stationery Office 1928

American College of Surgeons Fifteenth Year Book 1928 Cloth Pp 856, with illustrations Chicago, 1928

Medicolegal

Liability of Hospital for Negligence of Anesthetist

(Georgia Baptist Hospital v Smith (Ga) 139 S E R 101)

The Court of Appeals of Georgia, division 1, in affirming a judgment for damages in favor of the plaintiff, a Mrs Smith, says that, ordinarily, an incorporated hospital, primarily maintained as a charitable institution, is not liable for the negligence of its officers and employees, unless it fails to exercise ordinary care in the selection of competent officers and employees, or fails to exercise ordinary care in retaining such officers and employees

In the instant case the plaintiff (a pay woman patient), while undergoing a major operation in the defendant hospital and while lying unconscious and helpless, was severely burned and permanently injured (the sight of one eye being practically destroyed) through the gross negligence of one of the defendant s anesthetists, who, while administering ether to the plaintiff, allowed it to come in contact with the plaintiff's face and eyes, thereby destroying her evesight as stated and severely burning her face, and causing her intense pain and suffering for many months Under the ruling in the first paragraph and the facts of this case, the defendant hospital was not liable for the negligence of its anesthetist, unless it had failed to exercise ordinary care in her selection However, this court cannot hold that there was no evidence authorizing the jury to find first, that the anesthetist was incompetent, and, secondly, that the defendant hospital had failed to exercise ordinary care in her selection It was true that the petition failed to allege that the anesthetist was generally incompetent, or that the defendant did not exercise ordinary care in her selection However, no demurrer to the petition was interposed, and those issues were raised by the evidence adduced and were charged on by the court. The verdict in favor of the plaintiff was authorized

Evidence of Attendants and on Hypothetical Questions

(Mason et al v State Bank of Orlando & Trust Co et al (Fla) 115 So R 664)

The Supreme Court of Florida, division B, in affirming an order admitting a contested will to probate, says that the testimony tending to show mental incapacity of the testatrix was predicated largely on hypothetical questions propounded to physicians and nurses who did not attend her in her last illness This testimony was completely rebutted by the evidence of the physicians and nurses who attended the testatrix at the time of the execution of the will, all of whom testified that she was fully competent to make a will On the question of the mental capacity of a testatrix, the evidence of physicians and nurses who attended her in her last illness during which time the will was executed, will be accepted over testimony predicated on hypothetical questions propounded to physicians and nurses who did not attend the testatrix in her last illness

Unvaccinated Drugless Healer Subject to Quarantine

(City of Seattle v Cottin (Wash) 258 Pac R 520)

The Supreme Court of Washington, in affirming a judgment of conviction of the defendant for the violation of a city ordinance, says that the complaint charged that on a stated date he committed a misdemeanor in that he did wilfully and unlawfully refuse to remain in quarantine as ordered so to do by the chief quarantine officer of the city, all of which was contrary to an ordinance of the city providing for the preservation and protection of the public health in the city The facts admitted were that the defendant, a drugless healer, having a certificate to practice his pursuit, issued to him as a practitioner of mechanotherapy, in his professional capacity visited a person in Seattle infected with smallpox This fact became known to the chief quarantine officer of the city, who requested the defendant to submit to vaccination or go into quarantine The defendant at first agreed to go into quarantine, but afterward refused to remain in quarantine, left Seattle, and, after remaining away about eighteen days, returned and was arrested, on complaint and warrant It was also admitted that at the time of being exposed to smallpox, as alleged in the complaint, the defendant had not been vaccinated for a period of fifteen or twenty years and had had no previous infection from smallpox

The defendant contended that, having been legally qualified to practice a certain system of healing, under statutes relating thereto, he was entitled to be included within the class known as physicians and within the exception in the city ordinance of physicians when in the exercise of their duties as such Much learned and able discussion was advanced and many decisions were cited to sustain the contention that he was, and entitled to be called, a physician But this court is not disposed and does not find it necessary to enter into that field of discussion

There is no doubt and it was not denied, that the city had the power to enact the ordinance here in question and had the power to create health and quarantine officers, as it had done, by the charter and ordinance provisions Both the city and the state board of health, which is given very comprehensive powers by the state statutes (Rem Comp Stat sec 6001), have made rules and regulations for the quarantine of persons liable to infection from smallpox if not vaccinated within seven years or if not previously immunized by infection from the disease This very ordinance (15957) and an amendatory ordinance (37928) have been before this court and were upheld as valid *State ex rel McBride* v *Superior Court* 103 Wash 409, 174 Pac 973 Another ordinance (32444) was also considered in connection therewith, and the powers of city and state to order the quarantine of persons suspected of infection with contagious diseases upheld

So far as the ordinance of Seattle exempts physicians of any kind or school, it must yield to the superior authority of the state board of health which has adopted the rule

> Persons not living on the premises who are susceptible (not vaccinated nor having had previous infection) and who have been exposed shall be isolated or kept under the observation of the health officer or physician for a period of eighteen days Exposed immunized persons are exempt from isolation if successfully vaccinated within seven years or if they have had the disease Submission to vaccination exempts the individual from isolation

Under those provisions no one is exempted except exposed immunized persons, those who have been successfully vaccinated within seven years, or those who submit to vaccination —under none of which classes could the defendant claim exemption

Physicians May Testify to Employment and Dates

(Metropolitan Life Ins Co v Head (Ind) 157 N E R 448)

The Appellate Court of Indiana says that, in this action on a life insurance policy which the defendant company contended was void by reason of certain alleged misrepresentations made by the insured in his application for insurance, two physicians were called as witnesses, and, after testifying to the fact of their employment as the insured's physicians and to their treatment of him for diabetes, their evidence was, on motion, stricken out, on the ground that it was privileged Section 550 of Burns' 1926 statutes of Indiana provides that physicians shall not be competent witnesses as to matters communicated to them as such by patients in the course of their profession, or advice given in such cases But this statute does not prohibit physicians from testifying to the fact of employment, the rendition of professional services, and the dates thereof What the statute does not exclude is competent Competence is the rule, incompetence the exception

Proper to Show Physician Paid by Insurance Company

(Hall v Fulton Iron Works Co (Mo) 296 S W R 851)

The St Louis (Mo) Court of Appeals, in affirming a judgment in favor of the plaintiff in this action to recover damages for personal injuries, says that a physician who was a witness for the defendant was required to answer over objection, that he had been paid for his professional services rendered to the plaintiff by an insurance company After the witness had left the stand, and both plaintiff and defendant had rested counsel for the defendant moved that the jury be discharged by reason of the fact that such testimony had been elicited, asserting that it had been brought out to prejudice the defendant before the jury, and inject a third party into the case But this court regards the ruling of the trial court as having been manifestly correct The physician had given testimony contradictory in many respects to that of the plaintiff's medical expert, and calculated to minimize the extent of the plaintiff's injuries, and thus materially reduce the amount of damages that he might recover This court does not pretend to say which witness the jury should have believed, but, in the proper discharge of its duty of arriving at a finding of fact from such conflicting evidence, it was only fair and just that the jury should have been informed whom the physician represented, and what his real interest in the litigation was

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Society Proceedings

COMING MEETINGS

Alabama, Medical Association of the State of Birmingham April 17 20 Dr D L Cannon 519 Dexter Avenue, Montgomery, Secretary
American Association for Thoracic Surgery, Washington D C, April 30 May 2 Dr Ethan Flagg Butler Sayre Pa Secretary
American Association of Anatomists Ann Arbor Mich, April 5 7 Dr Lewis H Weed, Johns Hopkins Medical School Baltimore Secretary
American Association of Pathologists and Bacteriologists Washington D C April 30 May 2 Dr H L Kretschmer, 122 S Michigan Avenue Chicago Secretary
American Association of Pathologists and Bacteriolotsts Washington D C, May 1 2 Dr H T Karsner 2109 Adelbert Road, Cleveland Secretary
American Bronchoscopic Society Washington D C, April 30 Dr Louis H Clerf 128 South 10th Street Philadelphia Secretary
American Climatological and Clinical Association Washington D C May 1 2 Dr A K Stone Auburn Street, Framingham Center, Mass Secretary
American Dermatological Association Washington D C April 30 May 2 Dr C Guy Lane, 416 Marlborough Street, Boston Secretary
American Gastro Enterological Association Washington D C, April 30 May 1 Dr W J Mallory, 1720 Connecticut Avenue N W, Washington D C Secretary
American Gynecological Society, Washington D C April 30 May 2 Dr Floyd E Keene Medical Arts Building Philadelphia Secretary
American Laryngological Association Washington D C May 1 3 Dr G M Coates 1721 Pine Street Philadelphia Secretary
American Laryngological Rhinological and Otological Society Washington D C May 3 5 Dr R L Loughran, 33 East 63d Street New York Secretary
American Ophthalmological Society Washington D C, April 30 May 2 Dr Emory Hill Professional Building Richmond, Va, Secretary
American Otological Society Washington D C, April 30 May 1 Dr T J Harris 104 East 40th Street New York, Secretary
American Pediatric Society Washington D C April 30 May 2 Dr H C Carpenter 1805 Spruce Street Philadelphia Secretary
American Pharmacological Society Ann Arbor Mich April 12 14 Dr E D Brown University of Minnesota Minneapolis Secretary
American Physiological Society Ann Arbor Mich April 12 14 Dr W J Meek, Science Hall University of Wisconsin Secretary
American Society of Biological Chemistry Ann Arbor Mich April 12 14 Dr D W Wilson University of Pennsylvania Medical School Philadelphia, Secretary
American Society of Clinical Investigation Washington D C April 30 Dr J T Wearn Boston City Hospital Boston Secretary
American Society of Tropical Medicine Washington D C May 1 2 Dr Benjamin Schwartz, P O Box 131 Pennsylvania Avenue Station Washington D C Secretary
American Surgical Association Washington D C April 30 May 2 Dr Lincoln Davis 205 Beacon Street Boston Secretary
Arizona State Medical Association Tucson April 19 21 Dr D F Harbridge Goodrich Building Phoenix Secretary
Arkansas Medical Society El Dorado May 1 3 Dr W R Bathurst 810 Boyle Building Little Rock Secretary
Association of American Physicians Washington D C May 1 3 Dr J H Means Massachusetts General Hospital Boston Secretary
California Medical Association Sacramento April 30 May 3 Dr Emma W Pope 593 Market Street San Francisco Secretary
Congress of Physicians and Surgeons of North America Washington D C May 1 2 Dr W R Steiner 646 Asylum Avenue *Hartford* Conn Secretary
Federation of American Societies for Experimental Biology Ann Arbor Mich April 12 14 Dr E D Brown University of Minnesota Minneapolis Secretary
Florida Medical Association Tampa April 3 4 Dr Shaler Richardson 111 West Adams Street Jacksonville Secretary
Louisiana State Medical Society Baton Rouge April 10 12 Dr P T Talbot 1551 Canal Street New Orleans Secretary
Maryland Medical and Chirurgical Faculty of Baltimore April 24 26 Dr John T King Jr 1211 Cathedral Street Baltimore Secretary
North Carolina Medical Society of the State of Pinehurst April 30 May 2 Dr L B McBrayer Southern Pines Secretary
Ohio State Medical Association Cincinnati May 1 3 Mr Don K Martin 131 East State Street Columbus Executive Secretary
Pacific Coast Oto Ophthalmological Society Santa Barbara April 18 20 Dr Walter F Hoffman 817 Summit Avenue Seattle Secretary
South Carolina Medical Association Columbia April 17 19 Dr E A Hines Seneca Secretary
Tennessee State Medical Association Nashville April 10 12 Dr H H Shoulders Lambuth Building Nashville Secretary

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to The Journal in America for a period of three days No foreign journals are available prior to 1921, nor domestic prior to 1923 Periodicals published by the American Medical Association are not available for lending but may be supplied on order Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested)

Titles marked with an asterisk (*) are abstracted below

American Journal of Hygiene, Baltimore

8 1 124 (Jan) 1928

Host Parasite Relations Between Iodameba Williamsi and Certain Mammalian Hosts (Guinea Pigs and Rats) S C Smith Baltimore —p 1
*Experimental Studies on Viability and Transmission of Trichomonas Hominis R Hegner Baltimore —p 16
*Significance of Age Distribution of Poliomyelitis Evidence of Transmission Through Contact W L Aycock Boston —p 35
Correlations Between Death Rate from Diabetes Mellitus and Other Demographic Factors R Jordan New Haven Conn —p 55
Bionomics of North American Anophelines Winter Activities of Anophelines in Coastal North Carolina (36 Degrees N Lat) M C Balfour New York —p 68
Two Species of Giardia from Rat L A Potter Philadelphia —p 77
Effect of Bacillus Pyocyaneus on Cultures of Trichomonas Hominis M J Hogue Philadelphia —p 85
New Species of Mosquitoes from Venezuela H G Dyar and N N Tovar—p 89
*Reaction in Skin of Normal Rabbit Following Intradermal Injection of Material from Smallpox Lesions Specificity of Reaction Application as Diagnostic Test N E McKinnon and R D Defries Toronto —p 93
*Laboratory Diagnosis of Smallpox Virus R D Defries and N E McKinnon Toronto —p 107

Killing the Trichomonads —Experiments with disinfectants reported on by Hegner indicate (1) that all specimens of *Trichomonas hominis* in fecal material are destroyed when subjected to 5 per cent and 2 per cent solutions of phenol (carbolic acid) for five minutes, but that some of them are able to withstand a 1 per cent solution for a similar period, and (2) that compound solution of cresol destroys all trichomonads in 2, 1 and 0 5 per cent solutions in five minutes

Age Distribution of Poliomyelitis in Vermont —Aycock points out that the age distribution of poliomyelitis in Vermont (for which actual figures were available) showed a greater preponderance of cases in the younger age groups in urban than in rural communities, the number of cases diminishing rapidly with increasing age In a comparison of the age distributions in urban and rural populations of measles, diphtheria, and poliomyelitis, it was found that the incidence of the disease in the various age groups is directly proportional to concentration of the population The fact that all three diseases possess the same age distribution phenomena is evidence that the mechanism involved is identical for each of these diseases In measles it is clear that its age distribution is determined by immunity from an attack of the disease, while the age distribution of diphtheria is largely determined by subclinical immunity The similarity of the age distribution of poliomyelitis to that of measles and diphtheria is therefore taken as evidence that immunity, largely subclinical, is likewise responsible for its age distribution On this basis, the idea is set forth that the virus of poliomyelitis attains a distribution equal to that of measles and diphtheria, in the course of which the majority of persons become immunized either subclinically or through unrecognized attacks of the disease

Diagnostic Test for Smallpox —The intradermal injection of material from smallpox cases into normal rabbits evokes regularly a lesion having definite characteristics The specificity of this reaction has been shown by the modified response of such inoculated rabbits to vaccine virus when applied to the skin The intradermal injection of material from cases of chickenpox into normal rabbits fails to elicit such a reaction Comparison of the lesions following the intradermal inoculation of test material into a normal rabbit and, at the same time, into a vaccine-immunized rabbit, is advocated by McKinnon and Defries as a reliable procedure for the diagnosis of smallpox

Laboratory Test for Smallpox Virus —According to Defries and McKinnon, the reaction in the skin of the vaccine-immunized rabbit following the intradermal injection of smallpox material may be useful in the diagnosis of smallpox, but it is so variable, both in occurrence and in character, that accurate interpretation is often impossible The corneal reaction is specific, but positive results have been found by them in only about half the tests when known smallpox material was used The intradermal injection of smallpox material into normal rabbits evokes regularly a definite, specific lesion The development and retrogression of the lesion produced by the intradermal injection of smallpox material into the normal rabbit differs markedly from the course of the lesion similarly produced in the vaccine-immunized rabbit The repeated intradermal injection of smallpox material into rabbits produces in them a definite immunity against vaccine virus A laboratory test for smallpox virus is found in the development of the typical lesion following intradermal inoculation of smallpox material in the normal rabbit, contrasted with the response following a similar procedure in the vaccine-immunized rabbit

American J Obstetrics and Gynecology, St Louis

15 1 144 (Jan) 1928

*Epidermidalization of Cervix Uteri Its Relation to Malignancy C F Fluhmann San Francisco —p 1
New Obstetric Forceps L G Barton W E Caldwell and W E Studdiford New York —p 16
Present Status of Therapy of Cancer of Uterus J O Polak New York —p 26
Abdominal Reposition in Acute Inversion of Puerperal Uterus J L Huntington, F C Irving and F S Kellogg Boston —p 34
Endocrine Therapy R T Frank New York —p 40
Case of Recurrent Torsion of Fallopian Tube with Hematosalpinx J Casagrande New York —p 49
Case of Sympus Dipus M Dreyfuss New York —p 52
*Biochemical Studies of Human Semen Relation to Mucus of Cervix Uteri R Kurzrok and E G Miller Jr New York —p 56
Alleged Synergism of Magnesium Sulphate and Morphine H Beckman Milwaukee —p 72
Ovarian Dysfunction Dependent on Abnormalities of Ductless Glands B C Hirst Philadelphia —p 79
Rupture of Uterus in Scar of Previous Cesarean Section Occurring Twice in Same Patient Within One Year M J Gelpi New Orleans —p 85
Hernia Funiculi Umbilicalis Three Cases A F Hebert New Orleans —p 86
New Style Funnel for Use with Electric or Kieth Water Power Breast Pump F P McNalley St Louis —p 89

Epidermidalization of Cervix Uteri —By epidermidalization is meant a process by which the normal cylindric epithelium of the cervix is replaced by a stratified squamous epithelium Five theories have been suggested by Fluhmann to account for the exact mechanism involved in this change It was found to occur in fifty-nine instances of chronic cervicitis from a series of 1,195 specimens of the cervix and in twenty-nine of 100 cervical mucous polypi It was also noted in new-born cervices, and there are many references in the literature to the finding of squamous epithelium in the endometrium At times the process may lead to the formation of atypical epithelial overgrowths, which may be termed "epidermoidalization" Careful study of serial sections and repeated biopsies may be necessary to differentiate these conditions from an early carcinoma In rare instances, malignancy can be excluded, but certain features are present which may be considered as "precancerous" It is not certain that these really represent a transition from a benign to a malignant growth, and there is much evidence in support of the belief that most of these lesions would probably prove to be harmless

Relation of Human Semen to Mucus of Cervix —Kurzrok and Miller found that there is present in human semen a substance that dissolves human cervical mucus The properties of this lytic substance suggest that it is an enzyme Considerations are offered relating this substance to sterility and fertilization Semen has a strong reducing action on thionin and the possible significance of this reaction is discussed The reduction phenomenon of semen may have a bearing on the oxidative processes following fertilization Semen contains neither oxidase nor glutathione

American J Roentgenol & Rad Therapy, New York

19 1 100 (Jan) 1928

Treatment of Brain Tumors by Irradiation During Past Thirteen Year H K Pancoast Philadelphia —p 1
Radium in Treatment of Leukemia W L Brown Chicago —p 15
Roentgenologic Manifestations of Primary Carcinoma of Lung I Parenchymal Type B R Kirklin and R Paterson Rochester Minn —p 20
*Diverticula of Thoracic Esophagus L A Smith Indianapolis —p 27
Roentgenologic Consideration of Mediastinum W W Belden New York —p 36
Use of Amyl Nitrite as Antispasmodic in Roentgen Ray Examination of Gastro Intestinal Tract G W Holmes and K Dresser Boston —p 44
Standardization of Roentgen Ray Dose O Glasser and U V Portmann, Cleveland —p 47
Influence of Roentgen Rays on Gastric Secretion J T Case and W N Boldyreff Battle Creek Mich —p 61
Hourly Variations in Effect of Equal Roentgen Ray Doses on Growth of Vicia Faba Seedlings M C Reinhard and K L Tucker Buffalo —p 71

Treatment of Brain Tumors by Irradiation—One hundred and thirty-six intracranial tumors have been treated by Pancoast by irradiation over a period of thirteen years Of these forty six were pituitary growths, and are not reported Of the extrasellar tumors, statistics are available in only the cerebellar group comprising forty-eight patients Of these, twenty-five are known to be alive for varying periods of a few months to thirteen years Pancoast states that uniformity of irradiation technic is absolutely essential and does not exist at the present time Much treatment is carried out in a more or less haphazard manner Brain tumors must be treated according to the same general principles that apply to tumors elsewhere, but with due regard for the fact that they are in the brain A proper combination of external irradiation and radium implantation may be found necessary in many tumors if histologic prognostication becomes a possibility Apparent success ascribed to irradiation may frequently be the result of the operative procedure acting as a decompression

Diverticula of Thoracic Esophagus—Nine instances of diverticula of the thoracic esophagus are described by Smith in three of which the sacculations were multiple The fact that in six cases symptoms were absent indicates that the condition is probably rather frequent but is not diagnosed In only one patient was there any evidence whatever of cardiospasm, which has been considered an important causative factor Two additional instances of nontraumatic paraesophageal gastric hernia are described, associated with esophageal diverticula

Archives of Pathology & Lab Medicine, Chicago

5 1 194 (Jan) 1928

*Hypertrophy of Muscle in Suprarenal Vein in Hypertension M A Goldzieher and I Sherman New York —p 1
*Fat Content of Pathologic Thyroids in Man R H Jaffe Chicago —p 15
Vascular Lesions of Portal Cirrhosis A H McIndoe Rochester Minn —p 23
*Sixty Three Deaths from Carbon Monoxide Poisoning in Private Garages W D McNally Chicago —p 43
Scopometry System for Optical Measurement and Study of Colloids and Other Dispersions W G Exton New York —p 49
Aid in Testing Gastric Contents for Lactic Acid E M Watson London Ont —p 66
Focal Infection and Elective Localization' W L Holman Toronto —p 68

Hypertrophy of Muscle in Suprarenal Vein in Hypertension—The musculature of the suprarenal veins was examined and measured by Goldzieher and Sherman in cases of hypertension in cases of renovascular disease without evidence of hypertension and in cases without either hypertension or renovascular impairment In the first and the second groups the musculature was hypertrophied, as compared to that of the third group Both the musculature of the central vein and the single muscle bundles of the small venules participated in the hypertrophy Injection of the suprarenals through the central veins in patients with hypertension revealed a different distribution of the injected dye from that in the controls

Fat Content of Pathologic Thyroids—The material studied by Jaffe consisted of two parenchymatous goiters (adolescent type), twelve colloid goiters twenty exophthalmic goiters, twelve adenomatous goiters three adenomatous and exophthalmic goiters, eight atrophic glands one acute purulent thyroiditis, one chronic thyroiditis (Riedel s struma), one tuberculosis of the thyroid, one malignant adenoma and two adenocarcinomas Simple, diffuse parenchymatous and colloid goiters do not markedly differ in their lipoid content from the normal thyroid Adenomas are usually rich in fat Relations do not exist between the fat content of the adenomas and that of the remaining thyroid tissue Inflammatory changes affect the lipoid segregation and excretion of the thyroid epithelium only when they lead to a destruction of the vesicles In exophthalmic goiters the fat is usually decreased This decrease is most pronounced in the areas composed of vacuolated cells Extrusion of lipoid droplets into the vesicular lumen does not occur The malignant epithelial tumors of the thyroid contain only fat that results from degenerative changes

Vascular Lesions of Portal Cirrhosis—The changes that occur in the portal circulation and particularly in the intrahepatic vascular system as a result of portal cirrhosis are demonstrated by McIndoe An attempt is made to correlate the vascular alterations with those in the hepatic parenchyma emphasis being laid on the physical and mechanical factors involved in the development of ascites Progressive dissociation of the portal venous and hepatic arterial circuits is found of such a nature that the portal blood is diverted to collateral channels at an earlier stage of the disease than the arterial blood The hepatic cells are thus divorced from their normal portal blood supply and are ultimately nourished almost entirely by the hepatic artery Ascites is considered to be associated with a lack of balance between the progressive sclerosis of the intrahepatic portal radicles and the rate of development of the collateral pathways, while hepatic insufficiency is more closely related to the subsequent obliteration of the persistent arterial connections The duration of the period between completion of the two processes depends on the rate of intrahepatic sclerosis and is of great importance in treatment Ascites, per se is amenable to medical and surgical treatment but when complicated with signs of hepatic insufficiency, as evidenced by retention of dye in the absence of jaundice, it is of much graver import It is an indication that the remaining arterial supply of the hepatic cells has been seriously reduced The possibilities of various forms of treatment are discussed with particular regard to bleeding esophageal varices

Carbon Monoxide Poisoning—McNally analyzes fifty three deaths caused by the inhalation of exhaust gas of automobiles in closed garages A concentration of 2 0 per cent carbon monoxide can be easily obtained in a closed garage when the motor is running To inhale as much as 0.2 per cent of carbon monoxide is dangerous The action of the exhaust gas is due chiefly to the formation of carbon monoxide hemoglobin Carbon monoxide can be removed from the blood of the patient by replacing the carbon monoxide with the oxygen of the air, pure oxygen or oxygen with 5 per cent carbon dioxide Deaths due to carbon monoxide in garages can be prevented by providing adequate ventilation with the doors and windows wide open, when one is working on the car with the motor running, or by connecting the exhaust pipe to an outside vent

Journal of Industrial Hygiene, Baltimore

10 1 32 (Jan) 1928

How Far Should Industry Go in Caring for Cases of Illness Not Due to Employment? R P Knapp South Manchester Conn —p 1
Apparatus for Artificial Respiration Barospirator of Professor T Thunberg C K Drinker Boston —p 7
Quantitative Measurements of Inhalation Retention and Exhalation of Dusts and Fumes by Man I P Drinker R M Thomson and J L Finn Boston —p 13

Journal of Pharmacol & Exper Therap, Baltimore

32 61 240 (Jan) 1928

Modification of Brodie and Russell s Method for Determination of Blood Flow A E Livingston Philadelphia —p 161
Application of Venturi Meter to Measurement of Blood Flow in Vessels G W Wagoner and A E Livingston Philadelphia —p 171
*Effects of Vasoconstrictor Substances on Kidney A E Livingston Philadelphia —p 181
Color Vision After Intravenous Injection of Santonin W Marshall, Aberdeen Scotland —p 189

Azo Dyes Containing Antimony in Treatment of Trypanosomiasis F Dunning and D I Macht Baltimore —p 205
Respiratory Stimulants in Acute Cocaine Poisoning in Rabbits C A Dragstedt and V F Lang Chicago —p 215
*Influence of Quinidine on Cardiac Irregularity Produced by Digitalis C C Haskell Richmond Va —p 223
Studies in Protoplasm Poisoning Recovery L F Shackell Salt Lake City —p 237

Effects of Vasoconstrictor Substances on Kidney —Results are presented by Livingston which confirm the report of Richards and Plant that minute doses of certain vasoconstrictor drugs may produce simultaneously a rise in blood pressure, an increase in kidney volume, a decrease in the volume flow of blood through the kidney, and diuresis This coincidence is regarded as evidence in favor of glomerular filtration

Effect of Quinidine on Cardiac Irregularity Produced by Digitalis —Haskell asserts that the ability of quinidine to restore regular cardiac action when this has been disturbed by toxic doses of digitalis is due partly to the action on the vagal endings, and, to a less extent, to a direct influence on the myocardium

Journal of Preventive Medicine, Baltimore

2 1 77 (Jan) 1928

*Measles in Institutions for Children I Mortality E S Godfrey Jr, Albany N Y —p 1
*Id II Use of Convalescent Serum E S Godfrey Jr Albany N Y —p 11
*Precipitin Test in Experimental Trichiniasis G W Bachman, Chicago —p 35
Typhoid Epidemic Santa Ana Calif C H Halliday and M D Beck, Berkeley, Calif —p 49
*Effect of General Irradiation with Ultraviolet Rays on Frequency of Colds G H Maughan and D F Smiley Ithaca N Y —p 69

Mortality of Measles in Institutions —Godfrey states that deaths from measles in institutions for children and for mental defectives have been responsible for from 3 to 26 per cent of the annual mortality from this cause in New York State, exclusive of New York City The average for the eight years from 1915 to 1922 was 10 per cent Outbreaks accompanied by a large number of deaths have occurred only in institutions caring for children under 2 years of age and in institutions for mental defectives In the institutions other than those for mental defectives in which outbreaks with a high mortality occurred, a large percentage of the small children were foundlings and illegitimate children, many of them marasmic, rachitic or otherwise undernourished The mortality rate from other causes than measles was excessively high The institutions were frequently overcrowded In some instances the personnel was insufficient to carry out the routine properly and was decidedly inadequate, both in numbers and in training, to cope with an epidemic of measles Outbreaks in institutions for mental defectives resulted in a large number of deaths when the disease attacked those of low grade mentality or when the outbreak was concurrent with other respiratory infections Outbreaks in institutions for adults and older normal children are not characterized by exceptionally high fatality rates The number of deaths occurring in them averaged less than two a year for the period from 1915 to 1922 and they have not affected adversely, to any appreciable extent, the mortality or fatality rates of the state as a whole The average annual measles death rate for 1915 to 1922 among normal institutional children from 5 to 14 years old was less than twice as high as for the state as a whole, while in children less than 5 it was more than twenty-six times as high

Use of Convalescent Serum in Treatment of Measles —In forty children's institutions in New York, there were 945 cases of measles and fifty-one deaths The highest fatality rate was in children from 6 to 11 months old, and after this age it declined rapidly Seventy-seven per cent of the deaths were in children under 3 years of age The fatality rate in children under 3 was almost twice as high for untreated children as for those given convalescent serum (seventy-four cases with nine deaths as against sixty-five cases with four deaths) On the whole, however, the figures for the combined years 1923 and 1924 for children under 3 are slightly in favor of the patients not treated with serum Godfrey believes that convalescent serum will favorably influence the mortality if administered during the incubation period, but that it is inadequate under exceptionally adverse conditions—at least in the dosage available He recommends giving four or five times the ordinary dosage if sufficient serum could be obtained In its prophylactic properties, the serum was a decided disappointment

Precipitin Test in Trichiniasis —The presence of precipitins in infected animals raises the question of the possibility of the precipitin test as a diagnostic aid in human trichiniasis A diagnosis, however, is generally desired during the early stages of the disease and so far, in animal work, precipitins have not been demonstrable until the thirtieth day Consequently, Bachman says that the method will probably not be of practical use for diagnosis except in cases of established infection

Effect of Ultraviolet Ray on Frequency of Colds —Maughan and Smiley found that a ten-minute irradiation of the naked body with the ordinary mercury vapor lamp at a distance of 30 inches once a week throughout the dark period of the year resulted, among four groups of persons (fifty-eight), in a reduction in the frequency of colds of from 27 9 to 40 3 per cent

Maine Medical Association Journal, Portland

19 1 17 (Jan) 1928

Diagnosis of Carcinoma of Colon and Rectum D F Jones Boston —p 1
Endoscopy in Diseases of Air and Food Passages J L Johnson Bangor —p 9

Minnesota Medicine, St Paul

11 67 130 (Feb) 1928

Fractures About Ankle Joint Involving Tibia and Fibula J M Hitzrot New York —p 67
*Achylia and Effects of Histamine C B Wright Minneapolis —p 73
Acute Pancreatitis J L Delmore Roseau —p 80
Postoperative Ileus C O Estrem Fergus Falls —p 83
*Acute Appendicitis in Young Children R L J Kennedy Rochester —p 88
Migratory Consumptive Problem E S Mariette Oak Terrace —p 91
Preparation of Prostatic Patients for Operation F R Wright Minneapolis —p 99
Cardiac Neurosis F A Willius Rochester —p 102
*Malaria Treatment of Paresis J C Michael Minneapolis —p 105

Incidence of Achylia in Children —Among 250 children between the ages of 6 and 14, Wright found four cases of achylia Two of these children were examined a year later and in one of them there was no free hydrochloric acid and in the other only a slight amount The other two were not reexamined Eighteen patients with achylia were examined both by the injection of histamine and by the estimation of total chloride None of these cases showed any free hydrochloric acid by fractional examination In five of the cases, however, there was a definite secretion of acid following the injection of histamine In the remaining thirteen cases there was no free hydrochloric acid In only two of the five cases showing free hydrochloric acid after histamine did the acid reach a normal limit The fact that one can get free hydrochloric acid in some cases of achylia by the injection of histamine is of interest

Analysis of Appendicitis in Children —The mortality rate for the group of 288 cases of acute appendicitis analyzed by Kennedy was 2 25 per cent Perforation occurs more frequently in the earlier years, in inverse ratio to the age of the patient Kennedy says that if a child has an acute complaint, referable to the abdomen, acute appendicitis should be suspected, the child should be watched closely, examined carefully for evidence of a diseased appendix and treated promptly when positive signs are found

Malaria Treatment of General Paralysis —The clinical results obtained by treating thirty-five general paralytic patients with induced malaria are reported on by Michael Fourteen cases were of the advanced institutional type, twenty-one were of the less advanced stages of the disease The diagnosis of general paralysis, the principles of malaria therapy, necropsy data and serologic changes in treated cases are discussed Patients in the advanced stages of the disease were less favorably influenced than the series of patients i the relatively less advanced stages of the paretic disease This latter series presented, after two years and more a remission rate of 64 per cent

Missouri State M Association Journal, St Louis

25 1 42 (Jan) 1928

*Acid Base Balance in Children with Reference to Intestinal Disturbances E B Woods St Louis —p 1
*Benign Prostatic Hypertrophy G H Ewell Madison Wis, and F M McCallum Kansas City —p 9
Chronic Cervicitis L Dorsett St Louis —p 14
Automatic Bladder G W Robinson Kansas City —p 15
*Sodium Chloride Intravenously in Treatment of Bromism G V Stryker St Louis —p 18
*Congenital Familial Atrophy of Nails A L Walter Sedalia and W L Bradford Rochester N Y —p 20

Acid-Base Balance in Children —There are three theories as to the cause of infantile diarrheas of the unknown or non-infectious nature, namely, decrease in the acidity of the stomach and duodenum anhydremia, and production of a definite toxin from the intermediary products in the bacterial action on the protein in the intestine Treatment of acidosis must be first directed to the prevention of a further production of more acids, second to the replenishing of alkali reserve, third to the elimination of the acids and their salts, and fourth, to the treatment of the underlying factors whether they are acute infections, starvation or organic disease Woods stresses the fact that citric acid milk is advocated as a corrective in deficient gastric acidity because of its vitamin content and its stimulating power to oxidation processes within the body

Benign Hypertrophy of Prostate —Among 125 cases reported by Ewell and McCallum, there were five deaths, a mortality of 4 per cent The causes of death were shock twenty-four hours after a suprapubic cystotomy, angina pectoris, diabetes, uremia, and pulmonary embolism All the operations were done by the suprapubic route and, with the exception of six cases, by the two stage method The authors consider adequate bladder drainage and complete hemostasis as the two chief factors contributing to this low mortality rate

Treatment of Bromism —In the two cases of bromism reported by Stryker, physiologic sodium chloride solution was injected intravenously Prompt recovery ensued in both cases

Congenital Familial Atrophy of Nails —In a series seen by Walter and Bradford of seventy-three persons representing five generations, forty six were normal and twenty-seven defective Of the defective persons, eighteen were females and nine were males Twenty persons had the defect limited symmetrically to the nails of the thumbs and index fingers, while seven had all nails involved Moreover, all of these seven appeared in the last three generations There was no associated dystrophy of the hair, no evidence of cutaneous disease, and no hypothyroidism in these cases There was nothing to indicate organic or functional disorders of the nervous system The blood Wassermann reaction in several members of the family was negative A search for tinea in the scrapings from the nails was also negative

Northwest Medicine, Seattle

27 1 56 (Jan) 1928

Methods for Control of Scarlet Fever G F Dick Chicago —p 1
Intermittent Duodenal Stenosis R Hayes and A B Shaw Longview Wash —p 6
Gastro Intestinal Symptoms from Lesions of Urinary Tract C F Engels Tacoma Wash —p 16
Pulmonary Tuberculosis Treatment E W Hayes Monrovia Calif —p 19
Nontuberculous Pulmonary Abscess Its Increasing Frequency E A Pierce Portland Ore —p 24
Tumors of Thorax C R Castlen Seattle —p 27
Thoracoplasty Indications and After Care F Slyfield Seattle —p 30
Anatomy of Our Social Life. T W Todd Cleveland —p 33
Minot and Murphy Diet in Pernicious Anemia H H Kretzler Edmonds Wash —p 37
Senile Cataract Its Medical and Surgical Treatment J L McCool Portland Ore —p 40
Nonspecific Urethritis in Male W R Jones Seattle —p 43

Intermittent Duodenal Stenosis —Hayes and Shaw insist that the roentgenogram is by far the most important factor in not the only means of diagnosis and that it should show in the vast majority of cases whether intermittent duodenal stenosis is or is not present The prevailing clinical diagnoses made in these cases are usually cholecystitis, gastric or duodenal ulcer, appendicitis, constipation and gastric neurosis, and, very recently, migraine They report on thirty eight cases In nineteen cases in which operation was performed, no other pathologic change was found than that due to mesenteric pressure or membranes Six of the patients were children of the so-called cyclic vomiting type Two adults came to operation, neither of whom had responded to the medical regimen In one, a cecopexy and colopexy were performed At operation on the other, a dense, fibrous band was found holding the hepatic flexure down to the ileocecal region This was severed before the normal anatomy could be restored and the operation completed by doing a cecopexy and colopexy The results of both operations after from *twelve to fifteen months respectively, were decidedly favorable*, both patients being back at work and not complaining of any symptoms

24 89 168 (Feb) 1928

Etiology of Postoperative Abscess of Lung E C Cutler Cleveland —p 109
Chronic Recurring Headaches from Viewpoint of Gastro Enterologist. *J Forman Columbus* —p 115
Acute Mastoiditis M E Scott Massillon —p 122
Acrodynia A G Helmick Columbus —p 123
Saline Wheal Test as Measure of Blood Supply in Arterial Disturbances of Extremities W G Stern Cleveland —p 126
*Acute Appendicitis with Spontaneous Rupture of Appendiceal Artery Traumatic Appendicitis Two Cases D H Downey Dover —p 129

Rupture of Appendical Artery Traumatic Appendicitis —Downey reports a case of ruptured appendical artery in which he operated during the second attack, the first attack having occurred two days previously He assumes that the artery had ruptured at the first attack as evidenced by the presence of old clots This hemorrhage ceased spontaneously only to renew itself two days later, and this time it was discovered when operating for appendicitis Downey also reports what he believes to be a true traumatic appendicitis resulting from a severe blow over the appendix In this case the entire wound opened spontaneously on the tenth day No trace of suture material was visible The premature absorption of the catgut is explained by the presence of an excess of proteolytic enzymes in the tissues of the abdominal wall as a result of the bruising of the muscles from the blow

Ohio State Medical Journal, Columbus

24 1 88 (Jan) 1928

Medical Treatment of Peptic Ulcer A J Beams Cleveland —p 21
Fractures of Neck of Femur J C Walker Dayton —p 26
*Mental Disturbances Associated with Pregnancy C W Stone and L J Karnosh Cleveland —p 29
*Use of Tuberculin in Ocular Tuberculosis C. King, Cincinnati —p 32
Present Status of Knowledge of Pituitary Body C E Locke Jr Cleveland —p 37
*Scarlet Fever Immunization B Goldberg Cincinnati —p 44
Medical Social Service L L Bigelow Columbus —p 47

Mental Disturbances Associated with Pregnancy —Of eighty-five cases of mental disturbance associated with pregnancy and the puerperium investigated by Stone and Karnosh, thirty-eight were classified as dementia praecox, thirty as manic-depressive psychosis, sixteen as toxic-infectious psychosis, and one as a psychosis associated with cardiovascular disease Of this number, thirty-nine patients went home improved, and seven went home unimproved, of these five later improved, one went to a state hospital, and one could not be followed, thirty-one were transferred to other psychiatric institutions, and eight died Twenty-three of these patients had a family history of mental disease or chronic alcoholism Forty-four had mental disturbance in association with the first pregnancy In twenty-five patients there was a history of previous attacks of severe mental disturbance associated with earlier pregnancies In thirty instances mental disturbance was present during pregnancy, and in thirty-four instances, the mental disturbance appeared within one week of childbirth In this series of eighty-five patients there were twelve patients who threatened or actually attempted suicide

Use of Tuberculin in Ocular Tuberculosis —King believes that tuberculosis plays a more important etiologic role in ocular disease than has hitherto been believed in this country, and that tuberculin, when properly employed, is a therapeutic aid of the highest value in tuberculosis involving the eye

Scarlet Fever Immunization—Two outbreaks of scarlet fever in two institutions for children are analyzed by Goldberg There was a uniform mildness of all cases of scarlet fever encountered in the epidemic The Dick test proved an invaluable agent in determining susceptibility or immunity to scarlet fever It was of great help in handling the epidemic No child with a negative Dick reaction developed scarlet fever The passive immunity conferred by the injection of scarlet fever antitoxin prevented the occurrence of new cases for ten days It did not affect the severity of the disease occurring after that time After twenty eight days, only thirty-eight of seventy-six children given the scarlet fever antitoxin had a negative Dick test, while thirteen of them had developed scarlet fever Active immunization by use of Larson's detoxified toxin seemed to give equal satisfaction in preventing a threatened epidemic in another group One hundred and fifty-nine days after the first dose, 81 per cent of those originally giving positive reactions to the Dick test were still negative In another group of fifty-six children who received two doses, 82 per cent continued to show a negative reaction after a period of ten months

Oklahoma State M Association Journal, Muskogee

21 1 26 (Jan) 1928

Anomalous Conditions in Kidney, Ureter and Bladder W J Wallace and S F Wildman Oklahoma City —p 1
Pernicious Anemia L D Thompson St Louis —p 5
Treatment of Individuals Versus Treatment of Diseases C M Pounders Oklahoma City —p 12

Radiology, St Paul

10 93 184 (Feb) 1928

Scientific Basis of Phototherapy H D Griffith Aberdeen Scotland and J S Taylor Manchester England —p 93
Methods of Measuring Ultraviolet Radiation W W Coblentz Washington D C —p 116
Roentgenographic Measurement of Cardiac Output in Man F J Hodges, Madison Wis —p 122
Pancreatic Lithiasis S J Seeger Milwaukee —p 126
Value of Lateral Exposure in Roentgen Ray Examination of Chest T F Chapman San Francisco —p 139
Differentiation of Osteitis Deformans and Osteoplastic Metastatic Carcinoma C G Sutherland Rochester Minn —p 150
Acute Pleural Empyema R B Bettman and R A Arens Chicago —p 153
Nonopaque Foreign Bodies in Air Passages R G Allison and K Phelps Minneapolis —p 157
Case of Colloid Carcinoma of Cecum W W Belden, New York —p 160
Gastric Defect Produced by Cholecystogastrostomy R P O Bannon Fort Worth Texas —p 162
Fenestrated Shield for Roentgenography of Nasal Accessory Sinuses J D Blocker Rochester, Minn —p 163

Tennessee State M Association Journal, Nashville

20 301 339 (Jan) 1928

Bone Tumors H G Hill and J Penn Memphis —p 301
Osteomyelitis R C Robertson Chattanooga —p 309
Tularemia H C Stewart Nashville —p 315
Hemolytic Jaundice W C Dixon Nashville —p 319
Endoherniorrhaphy for Oblique Inguinal Hernia W M McCabe, Nashville —p 323

Texas State Journal of Medicine, Fort Worth

23 563 632 (Jan) 1928

Modern Methods of Treatment and Results in Cancer of Bladder B Lewis and G Carroll St Louis —p 574
*Hematuria 500 Cases R E van Duzen Dallas —p 577
Stones in Prostate and Seminal Vesicles J L White Houston —p 581
Persistent or Recurrent Pyuria in Infants and Children J M Venable San Antonio —p 583
Differential Diagnosis of Rectal Cancer C Rosser Dallas —p 585
*Value of Erythrocyte Sedimentation Rate in Treatment of Cancer C F Lehmann San Antonio —p 588
Blood Transfusion from Standpoint of Pathologist W W Coulter Houston —p 592
Electrosterilization of Tonsils W L Cahall —p 594
*Giardiasis Fifteen Cases C W Stevenson Wichita Falls —p 596
Importance of History of Heredity and Environment in Examination of Applicants for Employment J S Turner Dallas —p 599
Early Diagnosis of Pulmonary Tuberculosis R B Walker Sanatorium —p 605

Hematuria—The source of the hemorrhage in these 500 cases reported by van Duzen was urethra, thirty-eight cases, prostate, fifty-nine cases, bladder, eighty-two cases, ureter, seventy-five cases, and kidney, 172 cases In two cases it resulted from the use of a proprietary cough lozenge containing chloroform, capsicum, cubeb and menthol The urine contained many flakes of necrotic tissue and bright red blood Lime liniment (carron oil) was the causative agent in one case, and turpentine in another The cystoscopic appearance of the bladder in the last two cases showed intense injection of the mucosa with many areas of submucous hemorrhage Pregnancy existed in forty-two cases, focal infection in twenty-eight, syphilis in twelve, and pernicious anemia in seven Three hundred and nineteen patients required treatment other than medical

Erythrocytes Sedimentation Rate as Index of Response to Treatment in Cancer—Lehmann endorses the value of this test as an index of a patient's response to roentgen-ray or radium therapy, and considers it therefore a valuable aid to prognosis in the treatment of cancer It is a measure of a patient's resistance, and therefore will probably be found a helpful aid in determining toleration to roentgen-ray or radium treatment It will be found helpful in differential diagnosis

Treatment of Giardiasis—In the fifteen cases reported by Stevenson, neoarsphenamine alone or combined with acetarsone has proved a very efficient treatment

U S Naval Medical Bulletin, Washington, D C

26 1 216 (Jan) 1928

Physiology of Respiration in Relationship to Problems of Naval Medicine E F Du Bois —p 1
Fractures G F Cottle —p 16
Practical Therapy in Dermatology R L Sutton —p 27
Habitability of Submarines D N Carpenter —p 31
Acute Gingivitis Associated with Fusiform Bacilli and Spiral Forms C H Mack —p 40
Gallbladder Surgery R Smith —p 55
*Antityphoid Vaccination in U S Navy J C Pryor —p 57
Aviation Crashes at Pensacola 1927 J D Benjamin —p 63
Eye Examination as Factor in Reduction of Industrial Accidents J W Brewster —p 69
Sarcoma of Femur P F Dickens and G G Herman —p 73
Leukocytosis in Early Diagnosis of Cerebrospinal Fever P Richmond Jr —p 77
Infant Feeding in Tropics G F Cooper —p 79
*Tabes Diabetica F E Angle —p 81
*Tuberculosis with Concurrent Neoplasm Case C R Wilcox —p 85
Leukemia Three Cases J B Gordon —p 92
*Treatment of Gonorrheal Ophthalmia E C Ebert —p 99
*Pernicious Anemia Unusual Case R Krohn —p 102
Nephritic Diazo Reaction Cases W J N Davis Jr —p 10

Compulsory Antityphoid Vaccination — As antityphoid inoculation confers immunity, Pryor wonders whether we are not remiss in not requiring compulsory antityphoid inoculation in communities where typhoid is endemic

Sarcoma of Femur—Dickens and Herman report a case of osteogenic sarcoma of the lower end of the femur which apparently followed an accident sustained during a football game

Tabes Diabetica—The case of tabes reported by Angle was definitely shown to be caused by the toxins of severe diabetes mellitus The severe nervous symptoms in this case followed the taking of a diet high in fats with a dextrose-fatty acid ratio of 2 6 for a period of more than two years After the patient was placed on a Joslin diet with a dextrose-fatty acid ratio of 0 98, the nervous system markedly improved

Tuberculosis and Teratoma Testis—In December, 1921, Wilcox's patient was operated on for a tuberculous abscess of the sternum A roentgen-ray examination of the chest showed infiltration at the left hilum extending upward and at the right hilum extending outward which was suggestive of tuberculosis In May, 1924, he was readmitted because of swelling of the right testis An orchidectomy was performed The tumor proved to be a teratoma testis (embryonal carcinoma) In the interval between his discharge from the hospital in 1924 and his last admission in 1927, the patient received radium treatment over the right part of the abdomen and roentgen-ray treatment of glands in different parts of the body The radium treatment totaled 35,000 millicurie hours The roentgen-ray treatments were given once a week every other three months When the patient was admitted to the hospital in March 1927 his symptoms pointed toward cerebromeningeal irritation and involvement of the bases of

the lower end of Wirsung's duct, and three cases of cancer of the head of the pancreas All the cases occurred in men between 48 and 68, and were fatal in from six weeks to nine months after the onset of symptoms In all cases but one there was jaundice, progressive and continuous Operation was undertaken in two cases only Both were unsuccessful, as the liver was diseased beyond recovery All the pancreatic carcinomas had produced secondary growths The juxta-ampullary carcinoma of Wirsung's duct had produced metastases in the adjoining glands

44 229 284 (Winter) 1927

Hospitals of Madrid Busman s Holiday E W Hey Groves —p 229
*Acute Suffocative Edema of Lungs J A Birrell —p 239
*Coronary Obstruction Thirty Six Cases C F Coombs —p 249
Pathology of Coronary Occlusion G Hadfield —p 257
Two Cases of Angina Pectoris Following Sepsis N Neild —p 263

Acute Suffocative Edema of Lungs—Birrell reports four cases in which he relieved the distention of the lung capillaries quickly by diminishing the blood pressure, either mechanically by bleeding or in less urgent cases by vasodepressor drugs, such as morphine, atropine or chloroform By these measures the left heart also is automatically relieved of some of its load The amounts of blood withdrawn have varied from 14 to 24 ounces (about 400 to 700 cc) Bleeding is allowed to continue as long as the condition is improving and the pulse gaining in volume and slowing If it quickens or appears to be losing some of its newly acquired strength, the bleeding is stopped

Symptomatology of Coronary Obstruction—In all the thirty-six patients seen by Coombs, the first phase of the attack was a paroxysm of substernal pain, usually behind the manubrium, occasionally beneath the xiphisternum It radiated into the arms, the neck, even into the lower jaw, showing in all these situations a predilection for the left side. In sixteen cases friction was noted over the precordium, usually beginning a day or two after the onset of symptoms and disappearing inside a week The heart sounds were weak in twenty-five instances A triple cantering rhythm was heard in ten cases, in several cases embryocardia was noted, and in five cases a systolic murmur developed at the apex In sixteen cases the pulse was alternating at some stage of the attack, the degree of alternation being so slight in most instances as to escape detection except under the test of auscultation A sharp fall in the blood pressure was noted in seventeen cases Five patients developed auricular fibrillation, two, a bradycardia that was almost certainly indicative of auriculoventricular block, and another a speeding that suggested the onset of auricular flutter Slight fever was noted in eight cases Only nine patients survived The preponderating value of senile degeneration as a causal factor is strongly in favor of the view usually held that regards these obstructions as due to thrombosis In twenty-nine instances the type of heart disease present was labeled as senile, and in four as hyperpietic

British Journal of Children's Diseases, London

24 249 340 (Oct Dec.) 1928

*Analysis of Human Milk B Myers —p 249
Insulin Treatment of Diabetes Mellitus in Children K. U Toverud —p 257

Analysis of Human Milk—The milk of eighty-six nursing mothers was analyzed by Myers The average analysis was protein, 1 58 per cent, fat, 3 85 per cent, lactose, 6 per cent and the caloric value per ounce, 18 95 The last third of the milk contained the highest percentage of fat The milk of a nursing mother is apt to vary to some extent even from day to day, but unless this variation is excessive it does not affect the infant

Insulin Treatment of Diabetes Mellitus in Children—Toverud analyzes forty-seven cases of diabetes mellitus In the etiology, the hereditary factor does not seem to have played an important role, as it was present only in eight cases, or 17 per cent, whereas acute infections immediately preceding the diabetic symptoms were present in twelve cases, or 26 per cent A diet calculated on the basis of each child's carbohydrate tolerance has been used, providing a protein intake of 3 Gm per kilogram to children below 7 years of age and 2 Gm above 7 years of age The keto-antiketogenic ratio could usually not exceed 1 75 1 without development of acidosis All children ought to be treated with insulin and in three daily doses, as blood-sugar studies after protein intake reveal an increased blood sugar in normal and particularly in diabetic children A blood sugar of normal value throughout the whole day has been obtained in most of these children In some cases in which the disease has lasted for some time or is of a severe character, the blood sugar may be kept normal in the course of the day with three daily doses of insulin half an hour before meals During the night the blood sugar rises, and usually earlier in the night the more severe the diabetes The highest blood sugar value throughout the twenty-four hours is the fasting blood sugar in the morning Of the forty-seven children treated in this series seventeen, or 36 per cent, succumbed five died in coma closely connected with an infection One child died in coma just after a fracture of the right femur In four cases the children refused insulin treatment at home, and in the remaining seven cases little attention was paid to the diet, and insulin treatment was never given regularly

British Medical Journal, London

2 1063 1126 (Dec 10) 1927

Chronic Appendicitis I Symptomatology and Diagnosis W Trotter —p 1063
Id II Diagnostic Difficulties in Chronic Appendicitis J W Dowden —p 1066
Id III Gynecologic Considerations in Chronic Appendicitis V Bonney —p 1066
Id IV Etiology and Sequels of Chronic Appendicitis A. J Walton —p 1068
Action and Uses of Ovarian Extracts W E Dixon —p 1070
Clinical Features of Ectopic Pregnancy D Dougal —p 1074
*Compound Comminuted Fracture of Tibia and Fibula Involving Ankle Joint Treated by Bipp Method M Bell —p 1077
Gas in Peritoneal Cavity W McAdam Eccles —p 1078
*Acute Phosphorus Poisoning C F Swinton —p 1080
Arthritis Due to Paratyphoid B Bacillus Without General Symptoms J T Lewis —p 1080
Severe Hemorrhage Following Vaginal Tear J A Gaynor —p 1080

Bipp Treatment of Compound Fracture—Bell relates the case of a man who sustained a compound fracture of the ankle joint from being run over by an automobile After the wounds had been enlarged, several fragments of the tibia lying completely detached, were removed and a considerable tag of soiled, hopelessly lacerated muscle hanging out of the inner wound, was excised The upper cartilaginous surface of the astragalus was visible through the widely opened ankle joint A few small bleeding vessels were ligatured, the wounds, treated by the bipp method, were sutured by silkworm-gut sutures, and the leg was fixed between two lateral Gooch splints, extending from the tubercle of the tibia above to the sole of the foot below Recovery was uninterrupted

Acute Phosphorus Poisoning—Swinton's patient swallowed a teaspoonful of phosphorus mice paste She died five days afterward The full necropsy report is published

1 *83 120 (Jan 21) 1928*

Treatment of Exophthalmic Goiter A J Walton —p 82
Use of Hypertonic Solutions in Treatment of Increased Intracranial Pressure W R Brain —p 86
*Experiments in Malnutrition V H Mottram —p 88
Diseases of Faulty Nutrition R McCarrison —p 92
*Pernicious Anemia Treated with Liver Diet F A Phillipps —p 93
Thyroid and Manganese Treatment H W Nott —p 94
Placenta Praevia in Four Successive Pregnancies T MacCarthy —p 9
Forgotten Swab in Pelvis Encysted H R Segar —p 95
Lubricant for Applying Zinc Ionization to Male Urethra C F O White and B B Sharp —p 96

Experiments in Malnutrition.—The inadequacy of bread as a diet is explained by Mottram as being due mainly to the inadequacy of the quantity and quality of its protein Animal proteins even gelatins, supplement the proteins of bread, and the mixture has a high biologic value Males need more protein of high biologic value and more vitamin B than females Both brown and white breads are, by themselves poor articles of diet There is as yet no direct evidence that in a mixed diet brown bread is superior to white There is the lungs, and toward some pathologic process in the upper part of the abdomen The definite history of a malignant teratoma testis, and of a series of cold abscesses with a persistent drainage sinus in the right pectoral region, points to a metastatic carcinomatous process or a generalized tuberculosis as the most probable etiologic factor

Treatment of Gonorrheal Ophthalmia—Of ninety-two patients coming under Ebert's observation, forty-one received the combined treatment of subcutaneous and intramuscular injections of milk, in addition to local treatment with mild silver protein and mercurochrome-220 soluble Twenty-six received local treatment alone every two hours with boric acid irrigation, followed by instillation of mild silver protein Twenty-five patients were used as controls receiving various treatments Milk injection apparently did not have any therapeutic value Combined with local treatment, milk injection did not have any advantage over local treatment alone

Pernicious Anemia with Nephritis and Syphilis—The unusual feature in Krohn's case was the association of pernicious anemia with both chronic nephritis and syphilis

U S Veterans' Bureau M Bull , Washington, D C

4 1 86 (Jan) 1928

Cardiac Disorders of War Veterans L T Gager Washington D C—p 1
*Syphilis and Heart Disease P Morrison Memphis Tenn—p 6
Value of Blood Pressure in Diagnosis J H Nesbitt Dallas Texas—p 12
*Abuse of Diagnosis of Neurosyphilis F S Salisbury Camp Custer, Michigan—p 15
Neurasthenic Types R H Rea Seattle—p 18
Analysis of 100 Cases of Thoracotomy for Empyema Complicating Pneumonia H Freed Dwight Ill S W Haley San Antonio Texas and W O Stephenson Dallas Texas—p 22
*Changes in Blood After General and Local Anesthesia G H Garrett *Portland Ore—p 27*
Pellagra J E Sparks San Antonio Texas—p 31
Interpretation of Dental Roentgenograms A J Trainor St Cloud Minn—p 35
Photograph of Pneumothorax on Postmortem G E Lentine Castle Point N Y—p 38
Papilloma of Bladder with Absence of Subjective Symptoms in Patient Suffering from Dementia Praecox H D Jonez American Lake Washington D C—p 40
Carcinoma of Descending Colon in Young Adult D Kaplan Chicago —p 42
Standardization of Clinical Laboratory Work in Hospitals and Regional Offices. P B Matz—p 46

Syphilis and Heart Disease—Morrison reports five cases of tertiary syphilis with myocarditis All were of long standing with marked decompensation One patient had an aneurysm of the abdominal aorta which was not definitely diagnosed Aortitis was present in two of the cases Morrison urges that a more careful study of the cardiovascular system be made in all syphilitic persons

Abuse of Diagnosis of Neurosyphilis—Salisbury suggests that such an undesirable diagnosis as neurosyphilis should not be given unless it has been definitely proved The consideration of other conditions causing similar manifestations will improve diagnostic ability and may in many instances avoid embarrassing social and family difficulties Five illustrative cases are cited

Blood Changes After Anesthesia—The blood in seventy-seven patients operated on under a local anesthesia and in twenty-six patients operated on under ether anesthesia was examined by Garrett He says that the leukocytosis appearing after operation and ascribed by various observers to the operation is due largely to the anesthesia and not to the operative procedure There is a personal equation that affects the blood changes after operation, one patient showing a greater reaction and consequently greater blood change than another with the same operative procedure under apparently similar conditions There is a much greater postoperative reaction under ether anesthesia than is noted when a local anesthetic is used The longer the anesthetic is continued the greater the leukocytosis The height of the leukocytosis is reached thirty-six hours after the operation under ether anesthesia gradually reverting to normal by the sixth day The height of the leukocytosis under local anesthesia is reached twenty-four hours after the operation, returning to normal at about the third day General anesthesia with ether results in a greater reduction of the small mononuclear percentage than occurs after a local anesthetic

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below Single case reports and trials of new drugs are usually omitted

Archives of Disease in Childhood, London

2 323 365 (Dec) 1927

*Clinical Value of Blood Analyses in Nephritis in Childhood G A Harrison and W G Wyllie—p 323
*Incidence of Hernia in Children D Paterson and G M Gray—p 328
*Periostitis of Metatarsus W Attlee—p 332
Fecal Fat Analyses in Children G A Harrison and W P H Sheldon —p 338
Sclerema Neonatorum Relation to Fat Necrosis Case G L S Kohnstam and F K Herbert—p 349
*Esophagectasia in Child J A M Cameron—p 358
Hypertelorism in Several Generations D A Abernethy—p 361

Value of Blood Analysis in Nephritis in Children—The cholesterol and urea content of whole blood in cases of nephritis has been determined by Harrison and Wyllie, and a differential estimation of the plasma proteins has been made The results confirm the work of previous investigators As a guide to the clinical control of a case, the urea estimations are often of great value, the cholesterol and plasma determinations are generally superfluous As an aid to the classification of the type of nephritis, the same conclusion applies

Incidence of Hernia in Children—Among 130,243 children, outpatients, seen by Paterson and Gray, 1,018 were suffering from hernia of some variety, that is, an incidence of 0 8 per cent There were 773 simple inguinal hernias, operations were performed in 564, with four recurrences Of the 209 cases in which operation was not performed the hernia had apparently spontaneously disappeared in 185, while in twenty-four the hernia was still present The chances of a spontaneous disappearance of an inguinal hernia would appear to be better in females than in males There were only eight cases of strangulated hernia in the whole series, and no case of femoral hernia was found There were 214 cases of simple umbilical hernias, in forty-six operation was done, 101 disappeared spontaneously and in sixty-seven, for one reason or another, operation was not done This implies that half the children suffering from umbilical hernia are cured spontaneously and do not require operation, under the age of 12 years

Periostitis of Metatarsus—In the three cases reported by Attlee there was no history of injury or other obvious cause The first complaint was of pain in the dorsum of the foot, accompanied by a little swelling and tenderness over the middle of the metatarsal region At this stage roentgenograms did not show anything abnormal except a faint shadow round the middle of the shaft of a metatarsal bone, so faint that it was completely overlooked in one instance at any rate The shadow became more marked as time went on, and after a month or so films showed a fracture with considerable callus After another two or three months, nothing more than a slight thickening of the bone was visible In one case the disease affected two metatarsals one after the other the second bone being affected while the foot was being rested on account of the first In the case of this bone at any rate, there was no possibility of injury The disease begins as a periostitis, and the bone involvement, rarefaction and fracture are secondary occurrences A satisfactory explanation of the cause of the initial periostitis has not yet been given

Esophagectasia in Child—Cameron reports a case of dilatation of the esophagus from cardiospasm caused by an acute inflammatory lesion affecting the cells of Auerbach's plexus in the lower end of the esophagus The patient was a child, aged 6

Bristol Medico-Chirurgical Journal

44 153 228 (Autumn) 1927

Long Fox Memorial Lecture G A Buckmaster—p 153
Visit to Near East G Parker—p 173
Clinical Aspects of Dysmenorrhea R S S Statham—p 187
*Six Cases of Cancer Arising in Tissues Within Duodenal Loop H B Murgoci—p 195

Cancer of Tissues of Duodenal Loop—Murgoci reports one case each of malignant papilloma of the duodenal papilla, cancer of the lower end of the common bile duct cancer of the lower end of Wirsung's duct, and three cases of cancer of the head of the pancreas All the cases occurred in men between 48 and 68, and were fatal in from six weeks to nine months after the onset of symptoms In all cases but one there was jaundice, progressive and continuous Operation was undertaken in two cases only Both were unsuccessful, as the liver was diseased beyond recovery All the pancreatic carcinomas had produced secondary growths The juxta-ampullary carcinoma of Wirsung's duct had produced metastases in the adjoining glands

41 229 284 (Winter) 1927

Hospitals of Madrid Busman s Holiday E W Hey Groves —p 229
*Acute Suffocative Edema of Lungs J A Birrell —p 239
*Coronary Obstruction Thirty Six Cases C F Coombs —p 249
Pathology of Coronary Occlusion G Hadfield —p 257
Two Cases of Angina Pectoris Following Sepsis N Neild —p 263

Acute Suffocative Edema of Lungs —Birrell reports four cases in which he relieved the distention of the lung capillaries quickly by diminishing the blood pressure, either mechanically by bleeding or in less urgent cases by vasodepressor drugs, such as morphine atropine or chloroform By these measures the left eart also is automatically relieved of some of its load The amounts of blood withdrawn have varied from 14 to 24 ounces (about 400 to 700 cc) Bleeding is allowed to continue as long as the condition is improving and the pulse gaining in volume and slowing If it quickens or appears to be losing some of its newly acquired strength, the bleeding is stopped

Symptomatology of Coronary Obstruction —In all the thirty-six patients seen by Coombs the first phase of the attack was a paroxysm of substernal pain, usually behind the manubrium, occasionally beneath the xiphisternum It radiated into the arms the neck, even into the lower jaw, showing in all these situations a predilection for the left side. In sixteen cases friction was noted over the precordium, usually beginning a day or two after the onset of symptoms and disappearing inside a week The heart sounds were weak in twenty-five instances A triple cantering rhythm was heard in ten cases, in several cases embryocardia was noted, and in five cases a systolic murmur developed at the apex In sixteen cases the pulse was alternating at some stage of the attack, the degree of alternation being so slight in most instances as to escape detection except under the test of auscultation A sharp fall in the blood pressure was noted in seventeen cases Five patients developed auricular fibrillation, two, a bradycardia that was almost certainly indicative of auriculoventricular block, and another a speeding that suggested the onset of auricular flutter Slight fever was noted in eight cases Only nine patients survived The preponderating value of senile degeneration as a causal factor is strongly in favor of the view usually held that regards these obstructions as due to thrombosis In twenty-nine instances the type of heart disease present was labeled as senile, and in four as hyperpietic

British Journal of Children's Diseases, London

24 249 340 (Oct Dec) 1928

*Analysis of Human Milk B Myers —p 249
*Insulin Treatment of Diabetes Mellitus in Children K U Toverud —p 257

Analysis of Human Milk —The milk of eighty-six nursing mothers was analyzed by Myers The average analysis was protein, 1 58 per cent, fat, 3 85 per cent, lactose, 6 per cent and the caloric value per ounce, 18 95 The last third of the milk contained the highest percentage of fat The milk of a nursing mother is apt to vary to some extent even from day to day, but unless this variation is excessive it does not affect the infant

Insulin Treatment of Diabetes Mellitus in Children — Toverud analyzes forty seven cases of diabetes mellitus In the etiology, the hereditary factor does not seem to have played an important role, as it was present only in eight cases, or 17 per cent whereas acute infections immediately preceding the diabetic symptoms were present in twelve cases, or 26 per cent. A diet calculated on the basis of each child s carbohydrate tolerance has been used, providing a protein intake of 3 Gm per kilogram to children below 7 years of age and 2 Gm above 7 years of age The keto-antiketogenic ratio could usually not exceed 1 75 1 without development of acidosis All children ought to be treated with insulin and in three daily doses, as blood-sugar studies after protein intake reveal an increased blood sugar in normal and particularly in diabetic children A blood sugar of normal value throughout the whole day has been obtained in most of these children In some cases in which the disease has lasted for some time or is of a severe character the blood sugar may be kept normal in the course of the day with three daily doses of insulin half an hour before meals During the night the blood sugar rises and usually earlier in the night the more severe the diabetes The highest blood sugar value throughout the twenty-four hours is the fasting blood sugar in the morning Of the forty-seven children treated in this series seventeen or 36 per cent, succumbed five died in coma closely connected with an infection One child died in coma just after a fracture of the right femur In four cases the children refused insulin treatment at home, and in the remaining seven cases little attention was paid to the diet, and insulin treatment was never given regularly

British Medical Journal, London

2 1063 1126 (Dec 10) 1927

Chronic Appendicitis I Symptomatology and Diagnosis W Trotter —p 1063
Id II Diagnostic Difficulties in Chronic Appendicitis J W Dowden —p 1066
Id III Gynecologic Considerations in Chronic Appendicitis V Bonney —p 1066
Id IV Etiology and Sequels of Chronic Appendicitis A. J Walton —p 1068
Action and Uses of Ovarian Extracts W E Dixon.—p 1070
Clinical Features of Ectopic Pregnancy D Dougal —p 1074
*Compound Comminuted Fracture of Tibia and Fibula Involving Ankle Joint Treated by Bipp Method M Bell —p 1077
Gas in Peritoneal Cavity W McAdam Eccles —p 1078
*Acute Phosphorus Poisoning C F Swinton —p 1080
Arthritis Due to Paratyphoid B Bacillus Without General Symptoms J T Lewis —p 1080
Severe Hemorrhage Following Vaginal Tear J A Gaynor —p 1080

Bipp Treatment of Compound Fracture —Bell relates the case of a man who sustained a compound fracture of the ankle joint from being run over by an automobile After the wounds had been enlarged, several fragments of the tibia lying completely detached were removed and a considerable tag of soiled, hopelessly lacerated muscle hanging out of the inner wound, was excised The upper cartilaginous surface of the astragalus was visible through the widely opened ankle joint A few small bleeding vessels were ligatured the wounds, treated by the bipp method, were sutured by silkworm-gut sutures, and the leg was fixed between two lateral Gooch splints, extending from the tubercle of the tibia above to the sole of the foot below Recovery was uninterrupted

Acute Phosphorus Poisoning —Swinton's patient swallowed a teaspoonful of phosphorus mice paste She died five days afterward The full necropsy report is published

1 83 120 (Jan 21) 1928

Treatment of Exophthalmic Goiter A J Walton —p 82
Use of Hypertonic Solutions in Treatment of Increased Intracranial Pressure W R Brain —p 86
Experiments in Malnutrition V H Mottram —p 88
Diseases of Faulty Nutrition R McCarrison —p 92
*Pernicious Anemia Treated with Liver Diet F A Phillipps —p 93
Thyroid and Manganese Treatment H W Nott —p 94
Placenta Praevia in Four Successive Pregnancies T MacCarthy —p 95
Forgotten Swab in Pelvis Encysted H R Segar —p 95
Lubricant for Applying Zinc Ionization to Male Urethra C. F O White and B B Sharp —p 96

Experiments in Malnutrition —The inadequacy of bread as a diet is explained by Mottram as being due mainly to the inadequacy of the quantity and quality of its protein Animal proteins, even gelatins, supplement the proteins of bread and the mixture has a high biologic value Males need more protein of high biologic value and more vitamin B than females Both brown and white breads are, by themselves poor articles of diet There is as yet no direct evidence that in a mixed diet brown bread is superior to white There is strong evidence from animal work that for successful nursing of young the vitamin B content of the diet must be high

Effect of Liver Diet in Pernicious Anemia—Phillipps' patient was 68 years of age Her erythrocyte count was 1 670,000, hemoglobin, 45 per cent A prolonged course of arsenic had failed to produce appreciable alteration in the blood count She was then given 7 ounces of calf's liver daily, partly as raw sieved pulp and partly as cooked liver Within five weeks the erythrocyte count had risen to 5,580,000, hemoglobin, 72 per cent The rapidity of improvement appears to be remarkable in a patient of this age

China Medical Journal, Shanghai

41 989 1065 (Dec) 1927

Malaria in Village Near Peking C U Lee and H E Meleney —p 989
Eye Examinations for Trachoma in 1 602 Cases Y P Chan and F Oldt —p *992*
Kahn Reaction for Syphilis L C P Young —p 999
Kahn Precipitation Test for Syphilis J E Skinner —p 1004
Infant and Child Mortality in North China J Hammond and K Hsu —p 1006
Ephedrine Cases S T Wu and B E Read —p 1010
Skiascopy with Cylinders H T Pi —p 1017
Case of Abdominal Pregnancy Retained and Infected A H Skinner and H Hankow —p 1026
*Multiple Urethral Calculi F Y Wu and E R Wheeler —p 1028
Methods of Preparing Intestinal Protozoa for Study J F Kessel —p 1030

Infant and Child Mortality in North China—Hammond and Hsu present figures to show that in Peking, in the class of patient who comes to the Peking Union Medical College Hospital, the average size of the family, the birth rate and the mortality rate of children at different ages are comparable to those in Japan and the United States As to the causes of death infections appear to play a more important role than disorders of nutrition

Ephedrine in Asthma and Hypotension—Wu and Read report favorably on the use of ephedrine in cases of asthma and hypotension In urticaria it does not seem to give any benefit at all Ephedrine was given by mouth or intramuscularly in from 0 04 to 0 16 Gm doses, from 0 06 to 0 08 Gm being the average Usually a single dose was sufficient to relieve the symptoms, but at times it was necessary to give a second or even a third dose within twenty-four hours Beneficial effects usually took place within from twenty to thirty minutes, if ephedrine was given by mouth and in about ten minutes if it was given intramuscularly Prolonged use of ephedrine in small doses does not seem to have any ill effect One patient, who has been getting ephedrine, from 0 04 to 0 06 Gm, every one to three days for three years, has not complained of any undesirable effect, nor has any definite change been found except for some increase in the systolic blood pressure

Multiple Urethral Calculi—Wu and Wheeler removed ninety-three stones from the dilated posterior urether of a boy, aged 9 Only one stone was of any size It measured 1½ by 1⅛ inches (38 by 29 mm)

Glasgow Medical Journal

109 1 72 (Jan) 1928

*Leukemia in Childhood Twenty Two Cases W K Hunter —p 1
*Influence of Variations of Vagal Tone in Partial Heart Block G A Allan —p 30
*Dick Test and Immunity to Scarlet Fever R Cruickshank —p 46

Leukemia in Childhood—Hunter points out that leukemia in childhood differs in several respects from that in the adult The course of the illness in the child is usually more acute, the number of leukocytes in the blood is often much smaller, and the differentiation into the myeloid and lymphoid types is frequently a matter of considerable difficulty There are aleukemic cases, too, i e, cases without any increase, and sometimes a diminution, of the white cells, in which, if a differential count of the leukocytes is omitted, an error of diagnosis is almost inevitable Hunter s youngest patient was 7 weeks old when she first came under observation, and as she died a week later, the total duration of the disease (unless it started during intra-uterine life) could not have been more than eight weeks, and it might have been considerably less There were three patients aged 2½ years, the age of the remainder ranged from 2½ to 14 years, eight of these children being below 7 years, and ten above The onset of symptoms in some of the cases seemed to be so sudden as almost to suggest an acute infection In others the illness came on insidiously, so that the total duration was difficult to determine Counting, however, from the first observed symptoms to the time of death, one patient lived two years and four lived one year, but none of the other sixteen lived more than seven months Of these sixteen, eight died within two months, the shortest duration of illness being from four to five weeks

Partial Heart Block Without Evidence of Heart Disease—A case of partial heart block in a healthy adult, without evidence of heart disease, is recorded by Allan Exercise abolished the defect temporarily Pressure on the vagus usually abolished the defect A deep inspiration slowed the heart, and, if anything increased the defect Ocular compression stopped the whole heart for at least four and one-half seconds Atropine always temporarily abolished the block Atropine, as an initial and transient effect on three occasions, either produced block when conduction was normal or increased the grade of block which was already present Atropine, on four occasions, produced dissociation of auricle and ventricle, the ventricular rate during the disturbance being greater than that of the auricles

Diagnostic Value of Dick Test—Cruickshank has found that diagnostically the value of the Dick test is limited, since a proportion of scarlet fever patients are Dick-negative at the onset of the infection while others fail to become Dick-negative during convalescence Theoretically, all cases should be Dick-positive during the first few days of illness and become Dick-negative in from ten to fourteen days' time The Dick test has considerable value in indicating when immunity has developed and how long it persists in (*a*) patients with scarlet fever, (*b*) persons actively immunized with scarlatinal streptococcic toxin, and (*c*) persons passively immunized with antiscarlatinal serum

Journal of Obst & Gynec of Brit Empire, Manchester

34 701 915 (Winter) 1927

*Influence of Disease of Thyroid on Menstruation H Gardiner Hill and J F Smith —p 701
Chronic Nephritis Accidental Hemorrhage and Eclampsia R H Paramore —p *712*
Prevalence and Duration of Breast Feeding in Hospital Practice A L McIlroy —p *729*
Causation of Onset of Labor R A Gibbons —p *739*
Material and Methods of Gynecologic and Obstetric Clinic W B Bell —p 756
Case of Bilateral Lutein Cysts Complicating Uterine Fibromyomas W Shaw —p *772*
*Results of Wassermann Reactions Obtained from 2 000 Consecutive Pregnant Women G H Dodds —p *779*
*Ovarian Pregnancy with Hydatidiform Degeneration D A Fraser and R S S Statham —p *788*
Case of *Pneumococcal Peritonitis During Puerperium with* Recovery H F Seymour —p *793*
Portable Operating Table L C Rivett —p 795

Influence of Disease of Thyroid on Menstruation—An examination made by Gardiner-Hill and Smith of 300 cases of thyroid disease showed that menstruation may or may not be affected in these conditions, but when it is, the alteration tends to be in a uniform direction The type of menstruation varies inversely with the degree of thyroid activity, i e, in hypothyroidism there is often a tendency to excessive hemorrhage and in hyperthyroidism, to amenorrhea

Wassermann Reaction in Pregnant Women—Dodds reports the results of the Wassermann reaction obtained in 2,000 consecutive pregnant women A report other than negative was obtained in 130 Attention is drawn again to the frequent absence of a history or of clinical manifestations of syphilis in the pregnant woman, to the high percentage of stillbirths and deaths under 1 year of age from syphilis, and to the preventable character of this condition It is shown that the first evidence of syphilis, and in some cases the only evidence, was a positive Wassermann reaction

Ovarian Pregnancy with Hydatidiform Degeneration—The pregnancy in this case was of about six weeks' duration The gestation cavity was situated outside the corpus luteum, which was intact There was no decidual change nor was there any ectopic endometrium in the ovary Attention is drawn by Fraser and Statham to the presence of interstitial cells in the wall of the gestation sac These might be mistaken for decidual or lutein cells

Lancet, London

1 115 166 (Jan 21) 1928

Pernicious Anemia Dawson —p 115
Education of Medical Officers for Service in Tropics A Balfour —p 117
Complications of Fractures of Long Bones C H Fagge.—p 122
Serum Treatment of Scarlet Fever J A Scott —p 124
Minor Tuberculosis E Ward —p 125
Localized Outbreak of Bacillary Dysentery in Smethwick A G M Severn and E W Evans —p 126
*Effect of Intravenous and Intramuscular Inoculations of Novasurol in Rabbits P Lazarus Barlow —p 127
Spasmodic Auricular Fibrillation and Bronchopneumonia Complicating Sepsis in Puerperium J A Kerr —p 128
Case of Pressure Palsy of Anterior Tibial Nerve N Walsh —p 129
Case of Cystic Pneumatosis of Bowel J Silverstone —p 129

Serum Treatment of Scarlet Fever —An experience with 150 cases of scarlet fever has convinced Scott that scarlatinal streptococcal antitoxic serum, given early in the disease causes a fall in the temperature, pulse and respiration rates relieves the subjective symptoms, and prevents the development of complications No immediate benefits were noted in cases treated after the fourth day of the disease. Concentrated scarlatinal streptococcal antitoxic serum was used in each case, 10 cc being injected intramuscularly in the vastus externus muscle.

Effect of Injections of Merbaphen in Rabbits —Merbaphen (novasurol) is the double salt of sodium mercurichlorphenyl oxyacetate with diethylbarbituric acid It is claimed to be a powerful diuretic, absolutely free from irritant properties, and therefore suitable equally for intravenous and for intramuscular injection, especially in cases of morbus cordis associated with dropsy Animal experiments made by Lazarus-Barlow suggest that in cases of long-standing heart disease the dose of merbaphen should be considerably reduced and that intravenous inoculation is more advisable than intramuscular He found that merbaphen may have a very profound action on the healthy liver and kidneys of rabbits, since in chronic heart disease the liver and kidneys are affected to a greater or less degree, this fact may be of importance In chronic heart disease the central portions of the lobules of the liver are most severely affected by the back pressure and the experiments show that this is the portion of the liver on which the drug exerts its greatest effect It would seem advisable, therefore, that in cases of long-standing heart disease in which there is a possibility of injury to the liver through back pressure the dose of merbaphen should be much reduced In such cases the kidneys also may become damaged, and the experiments suggest that if there is any nephritis or albuminuria the drug is contraindicated, or at least should be given only in very small doses The drug appears to have considerable irritant properties, no ill effects, however were observed at the sites of inoculation of the intravenous doses

Spasmodic Auricular Fibrillation with Pelvic Sepsis —Kerr asserts that a search of the literature failed to reveal a case of recovery of severe auricular fibrillation when complicated by bronchopneumonia The case reported by him seems to afford a convincing argument in favor of large doses of digitalis in the treatment of auricular fibrillation Although the patient never had any blood infection, she was seriously ill from pelvic sepsis, and hemolytic streptococci were found in the cervical canal In addition there had been a breakdown in the cardiac mechanism on at least one previous occasion four days before the treatment was initiated, and there was a fairly marked degree of bronchopneumonia It is therefore all the more remarkable that within twelve hours of the administration of 250 minims (15 cc) of a tincture of digitalis of known potency, fibrillation ceased, and no apparent cardiac irregularity could be detected until twelve hours afterward although the pulse rate was taken at the apex at half-hourly intervals during most of that period

Practitioner, London

120 1 68 (Jan) 1928

*Physiologic Action of Tea as Beverage R J S McDowall —p 8
Chronic Arthritis Treatment W H Wynn —p 12
Significance of Pain in Lower Extremities Treatment W Harris —p 28
Diaphragm and Pleural Effusions C Miller —p 38
General Practitioner s Part in Public Health Services O M Holden —p 46
*Treatment of Varicose Veins by Injection Methods R Thornhill —p 54
Treatment of Gastric and Duodenal Pain J T Maclachlan —p 59

Physiologic Action of Tea —McDowall concludes that the moderate consumption of properly made tea does not have any serious disadvantages and that taken with meals, it acts as a useful antagonist to the somewhat soporific effect of the meal itself It is, however, to be considered essentially a luxury, without any real value except that it promotes a sense of well being Its bad effect if taken in excess or if too long infused, may, in some persons, be considerable although fortunately these effects are never permanent and disappear if the supply is reduced An important practical point is that when tea has to be made in large vessels which require replenishing from time to time, some method must be adopted for removing the used tea leaves readily by having, for example, the tea suspended in small muslin bags or in a special wire gauze chamber When urns are in use, the tea should be made in teapots by rapid infusion with boiling water and poured into the larger vessels, which may then be kept heated as required

Treatment of Varicose Veins by Injection —Thornhill prefers the Genevrier method of treatment of varicose veins The constituents of the solution recommended by Genevrier are as follows urethane, 2 Gm , quinine hydrochloride 4 Gm , distilled water, 30 cc This is sterilized by boiling and as the quinine crystallizes out on cooling must be immersed in a bowl of hot water before using During the process the patient remains seated in an armchair, which position keeps the veins to be treated in a semidistended state At the first treatment, it is unwise to inject more than 1 cc of the solution At subsequent treatments 3 cc is injected The injections are made along the vein at intervals of from 1 to 2 inches, and four or five injections are given Each puncture is cleaned with ether and sealed with collodion

Japanese Journal of Medical Sciences, Tokyo

1 1 233 (June 27) 1927

*Acute Intestinal Obstruction S Saito —p 1
Effect of Roentgen Rays on Testis of Rat H Yamakawa —p 13
*Acute Intestinal Obstruction S Saito K Sakai and S Suzuki —p 43
Changes in Chlorides Metabolism in Duodenal Obstruction K Horiye —p 57
Studies of Serum Albumen Especially in Surgical Diseases H Okutani —p 69
Mammary Glands of Men and Women at Various Ages J Yoshida —p 171
Case of Mucocele of Appendix Case of Its Rupture and Two Cases of Pseudomyxoma Peritonei of Appendicular Origin S Saito —p 227

Acute Intestinal Obstruction Rôle of Pancreas —The results of his experiments lead Saito to believe that the pancreas is an important factor in causing death in cases of high intestinal obstruction The pancreatic juice displays the most powerful toxic activity at the moment of flowing into the duodenum The bile, on the other hand, plays a physiologic part by inhibiting this toxicity of the pancreatic secretion In fatal cases the toxic substances which are formed in the duodenum by activation of the pancreatic juice are absorbed through the mucous membrane and gain entrance into the circulation the inhibiting activity on the part of bile being insufficient

Cause of Death in Acute Intestinal Obstruction —Saito et al are of the opinion that the real cause of the rapid death of animals with duodenal obstruction should be sought in the perverted condition of the small intestine mainly below the obstruction By transplanting the bile duct or the ureter into the duodenum below the obstruction intoxication is prevented and the life of the animal prolonged Irrigating the intestine below the obstruction with physiologic sodium chloride solution is similarly effective Anastomosis of the duodenum above the obstruction with the colon is useless unless the intervening loop of intestine is irrigated strong evidence from animal work that for successful nursing of young the vitamin B content of the diet must be high

Effect of Liver Diet in Pernicious Anemia—Phillipps' patient was 68 years of age Her erythrocyte count was 1 670 000 hemoglobin, 45 per cent A prolonged course of arsenic had failed to produce appreciable alteration in the blood count She was then given 7 ounces of calf's liver daily, partly as raw sieved pulp and partly as cooked liver Within five weeks the erythrocyte count had risen to 5,580,000, hemoglobin, 72 per cent The rapidity of improvement appears to be remarkable in a patient of this age

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Journal of Obst & Gynec of Brit Empire, Manchester

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Material and Methods of Gynecologic and Obstetric Clinic W B Bell —p 756
Case of Bilateral Lutein Cysts Complicating Uterine Fibromyomas W Shaw —p 772
*Results of Wassermann Reactions Obtained from 2 000 Consecutive Pregnant Women G H Dodds —p 779
*Ovarian Pregnancy with Hydatidiform Degeneration D A Fraser and R S S Statham —p 788
Case of Pneumococcal Peritonitis During Puerperium with Recovery H F Seymour —p 793
Portable Operating Table L C Rivett —p 795

Influence of Disease of Thyroid on Menstruation—An examination made by Gardiner-Hill and Smith of 300 cases of thyroid disease showed that menstruation may or may not be affected in these conditions, but when it is, the alteration tends to be in a uniform direction The type of menstruation varies inversely with the degree of thyroid activity, i e, in hypothyroidism there is often a tendency to excessive hemorrhage and in hyperthyroidism, to amenorrhea

Wassermann Reaction in Pregnant Women—Dodds reports the results of the Wassermann reaction obtained in 2,000 consecutive pregnant women A report other than negative was obtained in 130 Attention is drawn again to the frequent absence of a history or of clinical manifestations of syphilis in the pregnant woman, to the high percentage of stillbirths and deaths under 1 year of age from syphilis, and to the preventable character of this condition It is shown that the first evidence of syphilis, and in some cases the only evidence, was a positive Wassermann reaction

Ovarian Pregnancy with Hydatidiform Degeneration—The pregnancy in this case was of about six weeks' duration The gestation cavity was situated outside the corpus luteum, which was intact There was no decidual change nor was there any ectopic endometrium in the ovary Attention is drawn by Fraser and Statham to the presence of interstitial cells in the wall of the gestation sac These might be mistaken for decidual or lutein cells

Lancet, London

1 115 166 (Jan 21) 1928

Pernicious Anemia Dawson —p 115
Education of Medical Officers for Service in Tropics A Balfour —p 117
Complications of Fractures of Long Bones C H Fagge —p 122
*Serum Treatment of Scarlet Fever J A Scott —p 124
Minor Tuberculosis E Ward —p 125
Localized Outbreak of Bacillary Dysentery in Smethwick A G M Severn and E W Evans —p 126
*Effect of Intravenous and Intramuscular Inoculations of Novasurol in Rabbits P Lazarus Barlow —p 127
*Spasmodic Auricular Fibrillation and Bronchopneumonia Complicating Sepsis in Puerperium J A Kerr —p 128
Case of Pressure Palsy of Anterior Tibial Nerve N Walsh —p 129
Case of Cystic Pneumatosis of Bowel J Silverstone.—p 129

Serum Treatment of Scarlet Fever —An experience with 150 cases of scarlet fever has convinced Scott that scarlatinal streptococcal antitoxic serum, given early in the disease causes a fall in the temperature, pulse and respiration rates, relieves the subjective symptoms, and prevents the development of complications No immediate benefits were noted in cases treated after the fourth day of the disease. Concentrated scarlatinal streptococcal antitoxic serum was used in each case, 10 cc being injected intramuscularly in the vastus externus muscle

Effect of Injections of Merbaphen in Rabbits —Merbaphen (novasurol) is the double salt of sodium mercurichlorphenyl oxyacetate with diethylbarbituric acid It is claimed to be a powerful diuretic, absolutely free from irritant properties, and therefore suitable equally for intravenous and for intramuscular injection, especially in cases of morbus cordis associated with dropsy Animal experiments made by Lazarus-Barlow suggest that in cases of long-standing heart disease the dose of merbaphen should be considerably reduced and that intravenous inoculation is more advisable than intramuscular He found that merbaphen may have a very profound action on the healthy liver and kidneys of rabbits, since in chronic heart disease the liver and kidneys are affected to a greater or less degree, this fact may be of importance In chronic heart disease the central portions of the lobules of the liver are most severely affected by the back pressure, and the experiments show that this is the portion of the liver on which the drug exerts its greatest effect It would seem advisable, therefore, that in cases of long-standing heart disease in which there is a possibility of injury to the liver through back pressure the dose of merbaphen should be much reduced In such cases the kidneys also may become damaged, and the experiments suggest that if there is any nephritis or albuminuria the drug is contraindicated, or at least should be given only in very small doses The drug appears to have considerable irritant properties, *no ill effects*, however, were observed at the sites of inoculation of the intravenous doses

Spasmodic Auricular Fibrillation with Pelvic Sepsis —Kerr asserts that a search of the literature failed to reveal a case of recovery of severe auricular fibrillation when complicated by bronchopneumonia The case reported by him seems to afford a convincing argument in favor of large doses of digitalis in the treatment of auricular fibrillation Although the patient never had any blood infection, she was seriously ill from pelvic sepsis, and hemolytic streptococci were found in the cervical canal In addition, there had been a breakdown in the cardiac mechanism on at least one previous occasion, four days before the treatment was initiated, and there was a fairly marked degree of bronchopneumonia It is therefore all the more remarkable that within twelve hours of the administration of 250 minims (15 cc) of a tincture of digitalis of known potency fibrillation ceased, and no apparent cardiac irregularity could be detected until twelve hours afterward, although the pulse rate was taken at the apex at half-hourly intervals during most of that period

Practitioner, London

120 1 68 (Jan) 1928

*Physiologic Action of Tea as Beverage R J S McDowall —p 8
Chronic Arthritis Treatment W H Wynn —p 12
Significance of Pain in Lower Extremities Treatment W Harris —p 28
Diaphragm and Pleural Effusions C Miller —p 38
General Practitioner s Part in Public Health Services. O M Holden —p 46
Treatment of Varicose Veins by Injection Methods R Thornhill —p 54
Treatment of Gastric and Duodenal Pain J T Maclachlan —p 59

Physiologic Action of Tea —McDowall concludes that the moderate consumption of properly made tea does not have any serious disadvantages and that taken with meals, it acts as a useful antagonist to the somewhat soporific effect of the meal itself It is, however, to be considered essentially a luxury without any real value, except that it promotes a sense of well being Its bad effect if taken in excess, or if too long infused, may, in some persons, be considerable although fortunately these effects are never permanent and disappear if the supply is reduced An important practical point is that when tea has to be made in large vessels which require replenishing from time to time, some method must be adopted for removing the used tea leaves readily by having, for example, the tea suspended in small muslin bags or in a special wire gauze chamber When urns are in use the tea should be made in teapots by rapid infusion with boiling water and poured into the larger vessels, which may then be kept heated as required

Treatment of Varicose Veins by Injection —Thornhill prefers the Genevrier method of treatment of varicose veins The constituents of the solution recommended by Genevrier are as follows urethane 2 Gm quinine hydrochloride 4 Gm distilled water, 30 cc This is sterilized by boiling and, as the quinine crystallizes out on cooling must be immersed in a bowl of hot water before using During the process the patient remains seated in an armchair which position keeps the veins to be treated in a semidistended state At the first treatment it is unwise to inject more than 1 cc of the solution At subsequent treatments, 3 cc is injected The injections are made along the vein at intervals of from 1 to 2 inches and four or five injections are given Each puncture is cleaned with ether and sealed with collodion

Japanese Journal of Medical Sciences, Tokyo

1 1 233 (June 27) 1927

*Acute Intestinal Obstruction S Saito —p 1
Effect of Roentgen Rays on Testis of Rat H Yamakawa —p 13
*Acute Intestinal Obstruction S Saito K Sakai and S Suzuki —p 43
Changes in Chlorides Metabolism in Duodenal Obstruction K Horiye —p 57
Studies of Serum Albumen Especially in Surgical Diseases H Okutani —p 69
Mammary Glands of Men and Women at Various Ages J Yoshida —p 171
Case of Mucocele of Appendix Case of Its Rupture and Two Cases of Pseudomyxoma Peritonei of Appendicular Origin S Saito —p 227

Acute Intestinal Obstruction Rôle of Pancreas —The results of his experiments lead Saito to believe that the pancreas is an important factor in causing death in cases of high intestinal obstruction The pancreatic juice displays the most powerful toxic activity at the moment of flowing into the duodenum The bile, on the other hand, plays a physiologic part by inhibiting this toxicity of the pancreatic secretion In fatal cases, the toxic substances which are formed in the duodenum by activation of the pancreatic juice are absorbed through the mucous membrane and gain entrance into the circulation, the inhibiting activity on the part of bile being insufficient

Cause of Death in Acute Intestinal Obstruction —Saito et al are of the opinion that the real cause of the rapid death of animals with duodenal obstruction should be sought in the perverted condition of the *small intestine* mainly below the obstruction By transplanting the bile duct or the ureter into the duodenum below the obstruction, intoxication is prevented and the life of the animal prolonged Irrigating the intestine below the obstruction with physiologic sodium chloride solution is similarly effective Anastomosis of the duodenum above the obstruction with the colon is useless unless the intervening loop of intestine is irrigated

Bulletins de la Societe Medicale des Hôpitaux, Paris

43 1711 1789 (Jan 5) 1928

*Prolonged Intensive Arsenical Treatment of Syphilitic Aneurysms M Pinard—p 1711
*Case of Pleurisy with Cholesterol in Effusion J Rouillard and Nativelle—p 1717
Treatment of *Pruritus and of Pruriginous Dermatoses by Lebedjew s* Method A Sezary and F Benoist—p 1722
Amebic Abscess of Liver Simulating Pneumonia F Bezançon and E *Bernard*—p *1728*
Pleuropulmonary Syndrome in Abscesses of Liver N Fiessinger and R Casteran—p 1746
Generalized Fibrocystic Osteitis R Morichau Beauchant P Perochon and Fagart—p 1757
Vaccinotherapy in Typhoid of Prolonged Course J Huber and V Jordachesco—p *1761*

Prolonged Intensive Arsenical Treatment in Syphilitic Aneurysms—In syphilitic aneurysms Pinard believes in using neoarsphenamine intravenously in doses ranging from 0 10 Gm to 1 20 Gm at the rate of about five injections in the first week and then at longer intervals Sicard, Caussade and Halle, in the discussion which followed, all argued in favor of smaller doses given subcutaneously, intramuscularly or orally

Case of Pleurisy with Cholesterol in the Effusion—The authors report a case of pleurisy in a woman who had had previous attacks *The fluid contained 12 Gm* of cholesterol per liter and a monobutyrinase

Pleuropulmonary Syndrome of Base in Abscesses of Liver—Two cases in which pleuropulmonary congestion proved to be an early *manifestation* of hepatic abscess are reported by Fiessinger and Casteran The amebic abscess was cold The temperature fell to normal within twenty-four hours after simple puncture and the injection of emetin The reduction in size of the abscess cavity was controlled by radiologic *observation of the injected iodized oil*

Vaccinotherapy in Typhoid of Prolonged Course—In five prolonged cases of typhoid, a single injection of typhoid-paratyphoid vaccine subcutaneously, was found by Huber and Jordachesco to be followed by complete apyrexia

Bulletin de la Soc d'Obst et de Gynec, Paris

16 693 748 (Dec) 1927

Obstetrics *in Argentina Chile Uruguay and Brazil A* Couvelaire—p *693*
*Cancer of Uterus in Pregnancy Radium Treatment H Pouey—p 702
Case of Uterine Inversion of Four Months Duration R Dupont—p 704
Treatment of *Mammary Abscesses by Besredka s Method of Puncture and Dressings* V Le Lorier—p *707*
*Pyotherapy of Puerperal Infection Devraigne Sauphar and Laennec—p 710
New Treatmint of Periuterine Infections Levy Solal and Louvel—p 712
Semipreventive Polyvalent Vaccination in Obstetrics P Brault and C Rochard—p *717*
*Treatment of Pernicious Anemia of Pregnancy by Injections of Blood P Brault—p *719*

Cancer of Uterus in Pregnancy—In the case reported by Pouey, there was a cancer of the uterus in a woman, six and a half months pregnant A tube of radium kept for three days in the cervical cavity was well tolerated Labor came on only eighteen days *ahead of the time calculated* Delivery and puerperium were normal There were no cervical tears Clinical cure has now persisted for forty-three months The child is apparently in perfect health

Treatment of Puerperal Infection by Pyotherapy—The pus used by Devraigne et al was obtained by puncture of a fixation abscess provoked by injection of oil of turpentine into a horse After bacteriologic examination *and incubation,* to demonstrate its sterility, the pus is suspended in physiologic *solution of* sodium chloride to which a preservative has been added The dose used was 4 cc a day, given subcutaneously in two injections, one in each thigh The authors divide their cases *into two groups*, the first, in which pus was used therapeutically, comprises fifteen cases In ten of these the results were *extremely favorable*, in four, fair, in one nil The second group consists of five cases in which the aseptic pus was intended to act as a preventive In three cases puerperal infection did not declare itself in spite of a previously existing elevation of temperature In two cases there was infection

New Treatment of Periuterine Infections—In treating inflammatory infiltrations of the parametrium, of the broad ligament and of the pelvis, Levy-Solal and Louvel use a bilateral and symmetric *injection of vaccine or active* protein into the uterine tissue, about on a level with the external surfaces of the lateral wall of the cervix, in the zone of maximum absorption, the needle being introduced to a depth of 3 or 4 cm There is a sensation of warmth at the end of half an hour Shock then occurs, but its duration is short, while the pelvic reaction lasts at least six or seven hours After this treatment, pain *subsided more rapidly* than after any other treatment Chronic edemas were also favorably influenced Twelve illustrative cases are described

Treatment of Pernicious Anemia in Pregnancy by Injections of Blood—Brault treated six cases of confirmed pernicious *anemia in pregnancy by* means of subcutaneous injections of blood and obtained four complete cures The blood formulas are *given for* the six cases Three of the patients had recovered from previous anemic conditions The injections, which are *gradually increased in amount from 2 to 20 cc*, are given every two days Previous examination of the blood by the Beth-Vincent method, is useful, but not indispensable The subcutaneous injection of blood seems to act as a specific stimulant of hematopoiesis Injections of blood made in the cases in which the fetus is at the earliest limit of viability, *retard the development of anemia* and make it possible to delay *delivery until the fetus is surely viable*

Lyon Chirurgical, Lyons

24 *625 764 (Nov Dec) 1927*

*Nerve Grafts Heterografts of Sciatic J Jianu and G Buzoianu—p 625
Septic *Phlegmon of Floor of Mouth* A Vachey and M Dechaume—p 642
*Results of One Hundred and Nine Radical Operations for Breast Cancer E *Dahl Iversen*—p *648*

Nerve Grafts Heterografts of the Sciatic—The problem of nerve *transplants* is a complicated one, and so far as the surgical phase of it is concerned, is only partly solved Experimental data demonstrate the *superiority* of dead heterogeneous nerve transplants in the repair of considerable loss of substance in peripheral nerves

Septic Phlegmon of Floor of Mouth as Described by Gensoul—Vachey and Dechaume insist that so-called Ludwig's angina was described by Gensoul in 1830 Gensoul, then surgeon in chief of the Hotel-Dieu de Lyon, has given a clear anatomic and clinical picture, *as well as the principles underlying* its surgical treatment As a matter of historic justice the authors suggest that the name Ludwig's angina be replaced by that of septic phlegmon of Gensoul

Results of One Hundred and Nine Radical Operations for Breast Cancer, Relation of Microscopic Changes to Recurrence—One hundred and nine cases were followed up three years after radical operation Thirty-three per cent of the patients were dead The following factors were found to be of prognostic *importance (1) Size of the tumor* Tumors the size *of a plum gave a mortality of 17 per cent larger tumors up* to the size of an egg, 87 per cent (2) Variety Medullary carcinoma had a mortality of 100 per cent, simple carcinoma, 68 per cent, adenoma and scirrhus, 59 per cent (3) When the axillary glands did not contain microscopic metastases, the mortality was 41 per cent, as contrasted with 80 per cent *when metastases were present* Microscopic *metastases* in the axillary glands were found in 65 per cent of all cases Their absence from the axillary glands is not a guarantee that they are not present in the supraclavicular glands He estimates that when microscopic metastases exist in the axillary glands, there is supraclavicular involvement in at *least 27* per cent *of* the cases For these reasons, the author recommends removal of the supraclavicular glands in all cases

Paris Médical

63 *521 536 (Dec 24) 1927*

Method of Examination in Diseases of Biliary Tract J Carrere—p 521
*Diathermy in Diseases of Stomach etc E Biancani and H Biancani—p 527
Arsenic Preparation in Antisyphilitic Therapy E Gaujoux and *A* Aubry—p 531

Diathermy in Diseases of Stomach, Duodenum and Region of the Solar Plexus—The eleven cases of E and H Biancani in which pain in the upper quadrant of the abdomen was a prominent symptom were favorably affected by diathermy The tri weekly treatments lasted from thirty to forty-five minutes The intensity of the current was increased from 2 000 to 2,500 and sometimes to 3,000 milliamperes These treatments not only banished pain, they diminished aerophagy revived the appetite, overcame vomiting migraine and vertigo and regularized the stools In two cases improvement of the objective disturbances was verified by fluoroscopic examination

Presse Medicale, Paris

35 1569 1584 (Dec 24) 1927

*Intestinal Stasis and Inflammations of Ascending Colon E Duroux —p 1569
Pathogenesis of Ozenous Atrophic Rhinitis A Malherbe —p 1572
Submalleolar Erythrocyanosis E Juster —p 1573

Intestinal Stasis and Inflammations of Ascending Colon—Duroux points out the role of inflammation of the ascending colon in chronic intestinal stasis He obtained excellent results from simple operations, such as cecoplication, and believes that colectomy should be reserved for exceptional cases of extensive volvulus or megacolon

36 1 16 (Jan 4) 1928

*Influence of Ingestion of Albuminoids on Arterial Pressure. P Pagniez and A Escalier —p 1
*Pathogenic Role of Nanta s Splenic Mycosis C Oberling —p 2

Influence of Ingestion of Albuminoids on Arterial Pressure—During the first period of digestion albuminoids produce much greater hypotension than do other foods Pagniez and Escalier tabulate the readings in seven patients After a meal composed of 160 Gm of beefsteak, one egg 30 Gm of bread and half a glass of water, the pressure reading may fall two or three points below the subject's average pressure

Pathogenic Rôle of Nanta's Splenic Mycosis—Oberling suggests that Nanta's splenic mycosis supervenes simply as an infection grafted on a spleen already diseased Mycotic lesions must reach an extraordinary development before they can be perceived as exerting a decisive effect on the disease process It is probable that iodide treatment acts on *Aspergillus nidulans* and cures the mycosis, but it does not influence the basic disease on which the mycosis is grafted

Revue de Chirurgie, Paris

65 617 695 1927

Case of Obliterated Vena Cava Inferior P Stricker and J de Girardier —p 617
*Osteochondritis Dissecans Paitre and Du Bourguet —p 626

Osteochondritis Dissecans—In an extensive article on osteochondritis dissecans the authors review the most important contributions to this subject, namely those of Konig Barth and Axhausen They conclude that it is a clinical entity per se, as differentiated from other conditions capable of forming joint mice Its pathogenesis is hypothetic A purely inflammatory or traumatic etiology must be dismissed It appears more probable that there exists a certain special fragility of the epiphyses, giving rise, at a later date, to detachment of foreign bodies, in other words a trophic necrosing process The cause of this local necrosis has not been established Axhausen's conception of its embolic origin, and of its relationship to the diseases described by Perthes, Kohler and Kienböck appears convincing These varied clinical entities have a number of characteristics in common Involvement of joints in young subjects of the male sex origin in epiphysis, slow evolution, the disparity in clinical and radiologic signs, and the factor of trauma, always invoked though never definitely proved

Revue de Medecine, Paris

44 859 998 1927

Pyloric Stenosis Due to Muscular Hypertrophy in Infants M Coffin —p 859
*Chronic Idiopathic Cyanosis C Trunecek —p 891

Chronic Idiopathic Cyanosis—When the circulation is interrupted, for example during syncope, the blood remains stationary, becomes filled with waste products and consequently becomes violet or blue in color The changes in color can best be studied in the tongue and buccal mucosa The symptoms of idiopathic cyanosis are irritability and early fatigue and sometimes a condition of the organs similar to that occurring in intermittent claudication Treatment consists in neutralizing the superfluous acids of the blood especially carbonic acid, which is the real determinant of the cyanotic color This may be done by a visit to the seashore and by the drinking of mineral waters Alkaline salts may be injected subcutaneously in the form of Trunecek's serum When the cyanosis originates in a lack of propulsive power of the heart cardiac tonics, such as compounds of xanthine caffeine, theine and theobromine should be administered as well

Revue Médicale de la Suisse Romande, Geneva

47 1001 1072 (Dec 25) 1927

Protecting the New Born Against Tuberculosis with B C G A Cramer —p 1001
*Necropsy on Infant Vaccinated with B C G R Girod and C Debarge —p 1011
Protection of the New Born Against Tuberculosis by B C G S Cordey —p 1017
*Death from Tuberculous Meningitis of Child Vaccinated with B C G J Taillens —p 1033

Necropsy on Infant Vaccinated with B C G—Girod and Debarge present the case of an infant who received during the first week of life three injections of B C G vaccine The child died of gastro-enteritis on the twenty-fifth day In the marrow of a vertebra were found a few tubercle bacilli evidence of their passage by the blood route There was no anatomic lesion of tuberculosis either in the spinal cord or in any other organ These facts show that the ingestion of B C G does not provoke tuberculous lesions, even in very delicate infants, the authors maintain

Death from Tuberculous Meningitis of Child Vaccinated with B C G—A child, aged 6 months, who had been vaccinated with B C G in the first days of life, died of tuberculous meningitis, aged about 6 months Either he had not been protected by the vaccine or he had been infected by it Vaccination with B C G is not without danger, Taillens says As a safer and more effective measure, the child should be separated from all persons affected with open tuberculosis

Schweizerische medizinische Wochenschrift, Basel

57 1257 1280 (Dec 31) 1927

Growth of Thyroid in School Age H Golergant —p 1257
Increase of Trachoma in Zurich Canton E von Mandach —p 1266
Influence of Anesthetics on Eye R Pflimlin —p 1268
*Influence of Iodine on Milk Secretion Grumme —p 1273

Influence of Doses of Iodine on Milk Secretion—Ordinar and small doses of an iodine protein compound stimulate the activity of the milk glands, larger doses check it Unlike potassium iodide, this compound does not produce symptoms of iodism It seems possible to increase the iodine content of milk by feeding a suitable iodine preparation to cattle, and thus preserve infants and young children from goiter

58 1 24 (Jan 7) 1928

Statistics of Exophthalmic Goiter in Switzerland (1922 to 1924) W Fluck —p 2 C td
*New Clinical Urinary Indicator J Markwalder —p 12
*Determination of Urinary Acidity W Strauss —p. 13
Puncture Wound of Heart Cure by Operation T Naegeli —p 14
Is There a Diphtheria Peril at the Present Time? O Stiner —p 15
Treatment of Carcinoma of Female Genitalia Questionnaire —p 17

New Clinical Urinary Indicator—Markwalder recommends a mixture of methyl red and methyl blue (equal parts of each in a 0 5 1,000 alcoholic solution) for testing the reaction of urine In the presence of acid this solution turns blue, in the presence of alkali, green In a dark bottle, it keeps well It is adapted to quantitative examination

Determination of Urinary Acidity—Criticisms of Neubauer s indicator on theoretic grounds are answered It remains, however, in Strauss opinion, an inconvenient method, and he suggests, instead, the use of methyl red, which gives a red color to a highly acid urine

Anales de la Facultad de Medicina, Lima

9 167 299 1926

*General Paralysis P Pardo Figueroa —p 167
The Causative Organism of Verruca Peruana O Hercelles —p 231
A Conception of Verruca Peruana P Weiss —p 279

Malaria Therapy of General Paralysis—Among thirty cases of general paralysis treated with malaria, 76 per cent were benefited In some cases, in which blood was removed after inoculation, the paroxysms ceased the same day and usually permanently Reinoculation on failure of the first inoculation to produce reaction, was followed almost immediately by a series of attacks Malaria therapy was also used successfully in cases of cerebral syphilis and taboparalysis and in one case of dementia praecox with suspected syphilis Bismuth seemed to be the best adjuvant of malaria treatment In cases overtreated with arsphenamine, results appeared to be less definite In some cases complete remission has lasted longer than four years With intravenous inoculation, the incubation period was briefer than with the subcutaneous method The apparent lack of relation between the degree of the febrile reaction and the effect suggests that the mechanism of the curative action of malaria is complex A number of old traditions and documents bear out the idea that malarial therapy had been used by the Peruvians before the time of Columbus

Causative Organism of Verruga Peruana—In July, 1925, Hercelles isolated for the first time the causative organism of verruga peruana from a patient's blood He has also found it in the subcutaneous swellings *Bartonella bacilliforme* is merely the form assumed by the organisms in the peripheral blood As it is actually a coccus, a better name would be *Bartonella coccoides*

Archivos Latino-Amercanos de Pediatria, Buenos Aires

21 717 792 (Oct) 1927

Chronic Myeloid Leukemia M Acuña and F Bazan —p 717
Variot s Paroxysmal Cyanosis P de Elizalde and R Beranger —p 722
Chronic Leukemic Myelosis J Orrico —p 725
Physical Therapy in Infantile Paralysis V Escardó y Anaya —p 741
*Scarlet Fever and Croup M J del Carril —p 759
Pneumococcic Meningitis in Infants P Rueda —p 765
Phlegmasia Alba Dolens in Nephritis A Armand Ugon —p 768
Desquamating Scarlatinoid L M Petrillo —p 775

Scarlet Fever and Croup—Of seven patients with scarlet fever with early symptoms in the throat, most developed croup Intubation was required In none were diphtheria bacilli found In all patients with croup, one must remember the possibility of scarlet fever

Pneumococcic Meningitis in the New-Born—In a 14 day old infant with meningitis, the striking fact was that the existing meningitis was primary and was caused by the pneumococcus The child died thirty-six hours from the onset

Revista Medica del Uruguay, Montevideo

30 653 704 (Nov) 1927

*Extramembranous Pregnancy A Turenne —p 653
Meningeal Hemorrhage and Eye Symptoms P Scremini W Meerhoff E D Anava and E de Boni —p 660
*Endocrine Disturbances Simulating Kidney Disease J C Garcia Otero and O Vidovich —p 671
Postencephalitic Parkinsonism J C Mussio Fournier et al —p 685
Gynecomastia C Stajano and C M Dominguez —p 688
Diabetes Insipidus with Cerebral Abscess T Cozzolino and A E Gaggero —p 695

Extramembranous Pregnancy—Among some 18 000 labor cases seen since 1915, there was only one of extramembranous pregnancy Less than sixty are reported in the literature The patient's history did not disclose any unusual information with the exception of that to be expected in miscarriage in the fifth month Had the placenta not been inspected, the free development of the fetus outside the sac in the uterine cavity would have been overlooked A marginal placenta is common in such cases

Endocrine Disturbances Simulating Kidney Disease—In the first case reported, the presence of edemas, petechial hemorrhages, ecchymoses, bleeding from the gums, headaches and vasomotor disturbances had led to a diagnosis of renal disease A salt-free diet was prescribed Hemorrhage after the removal of a tooth yielded to the use of calcium chloride and thyroid Thyroid extract was then tried and all the symptoms disappeared The second case was similar

Archiv fur klinische Chirurgie, Berlin

149 1 212 (Dec 8) 1927

Postoperative Thrombosis and Embolism L Schönbauer —p 1
Treatment of Fracture of Femur Deubner —p 12
Late Results with Cartilage Transplantation A Mannheim and B Zypkin —p 31
Meniscus Injuries of Temporomaxillary Joint Resulting in So Called Anterior Dislocation F Lotsch —p 40
*Embolectomy J J Dschanelidze and S W Ogloblina —p 55
Lymphogranulomatosis of Digestive Tract T Pissarewa —p 75
Pocket Formation in Mesosigmoid with Bowel Incarceration H Siegmund —p 92
*Carbohydrate Variations and Operative Trauma E Schneider —p 99
Myeloma and Prevention of Accidents M Laesecke —p 123
Mechanical and Functional Ideas in Surgery E Liek —p 130
Acceleration of Wound Healing Through Action of Embryonal Juices and Proteoses of Hen S Kiaer —p 146
Case of Congenital Lack of Development of Gallbladder with Stones in the Common Duct F Ishiyama —p 183
Resection for Carcinoma of Cardia J Miyagi —p 187
Disturbances of Gastric Secretion in Chronic Diseases of Pancreas J Miyagi —p 194
*Extrahepatic Bilirubin Formation R Soejima —p 206

Embolectomy — Dschanelidze and Ogloblina report two cases and review the literature of the subject of embolectomy It appears from their research that the first attempt in this direction was made by a Russian surgeon, Ssabanejeff, in 1895 The first successful embolectomy however was performed by Labey in 1911 At the present moment the operation seems to have given its best results in Sweden Out of 109 cases collected from the literature, seventy-four were performed in that country This incidence is not due to any special predisposition to embolism and thrombosis in Sweden, but to the advocacy by Einar Key for the earliest possible operation The diagnosis of the condition is easy, the clinical picture of the ischemic phenomena is clear-cut It is the most urgent of all urgent operations and should be carried out as early as possible with the view of not only saving the life of the patient, but the extremity as well

Carbohydrate Variations and Operative Trauma Physiology of Blood Sugar in Surgery—Schneider calls attention to the appalling mortality in operations on patients with acidosis He feels that improvement in results should be sought in the study of metabolism rather than in trifling modifications of operative methods As a result of his studies, he believes that blood sugar level in surgical patients bears a definite relation to the acid-base content This, of course, does not include cases of diabetes, in which blood sugar is primarily influenced by the pancreatic secretion In the former group, the hyperglycemia is of secondary nature Patients with acidosis have their metabolism further impaired by operative trauma Patients who do not show any disturbance of the acid-base balance cope with the acidosis incident to operative trauma very well Their blood sugar level does not rise The diffusible blood sugar content measured by Glassmann's method shows an increase in the presence of an increased acid content of the body This sugar is split off from the albumins and proteins of the plasma This process is particularly marked in diabetics because of the failure of the pancreatic hormone At present, the estimation of the acid base content and of the carbohydrate metabolism do not gauge the toxic influences and the trauma incident to operative procedures

Extrahepatic Bilirubin Formation—Soejima found that normal human blood serum always reacts positively in the van den Bergh test He had also established that bilirubin is formed in wound secretions Bilirubin was found to be present in a hematoma Exposure of blood to air and introduction of germs from the air into normal blood resulted in acceleration of bilirubin formation He also found that the blood in the splenic veins of cases of Banti's disease contains more bilirubin than the blood from the splenic arteries Hyperbilirubinemia of Banti's disease has its origin in the spleen, as is confirmed by the fact that the bilirubin blood content in these patients returns to normal a few days after splenectomy In comparative studies of phenylhydrazine sensitiveness and intoxication in dogs with and without the spleen, a marked difference was noted in the time required for bilirubin formation Normal animals showed more intoxication than splenectomized animals Evidently in phenylhydrazine icterus, bilirubin is formed to a great extent independently of the liver, through a hemolytic process in the spleen Experiments with injection of hemolyzed blood into the splenic artery resulted in bilirubin formation A positive van den Bergh reaction, solubility in alcohol and colorless alcohol-serum albumin precipitation differentiate extrahepatic from obstructive icterus Hyperbilirubinemia accompanying local bilirubin formation can be differentiated from physiologic bilirubinemia by the solubility of its bilirubin in alcohol The postulate of Minkowsky and Naunyn that without the liver there can be no bilirubin is faulty On the contrary we must return to Virchow's idea that bilirubin can be formed anywhere in the body

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- Internal Male Pseudohermaphroditism Cryptorchism and Congenital Inguinal Hernia H von Seemen —p 370

Acute Suppurative Pericarditis—Acute suppurative pericarditis may arise as a result of infection through direct injury, or of extension of infection from neighboring organs, such as the pleura, lungs, mediastinum and esophagus An abscess has been known to perforate in the case of esophageal carcinoma and of tuberculous lymph nodes Inflammation of the myocardium may involve the pericardium Hematogenous infection of the pericardium in pyemia is relatively frequent Rarely the pericardium may become infected by way of lymphatic extension Such was the mode of infection in the case observed by the author In this case, the projectile had traversed the right lung and lodged in the posterior mediastinum An infected hemothorax on the right side resulted, from which the patient recovered in three weeks One week later, he began to complain of cardiac distress Two days after readmission to the hospital, pericardial effusion increased very rapidly and the patient presented a striking picture of the effect of pressure on the heart great agony, bulging eyes, cold sweat, cyanosis, marked dyspnea, dilation of the nostrils and imperceptible pulse Pericardiotomy was performed under local anesthesia A considerable quantity of pus escaped, but the bullet could not be located A drain was inserted into the outer angle of the pericardium, the most dependent point A rapid and uneventful recovery followed The case is interesting because it demonstrates the possibility of extension of infection by the lymph channel, in this instance, from the lymphatics of the lung to the pericardium It bears witness to the advantages of early operation Puncture of the pericardium is the surest diagnostic method When the operation of pericardiotomy cannot, for some reason, be carried out, paracentesis pericardii becomes a life-saving procedure The safest method is to introduce the trocar in the angle made by the articulation of the seventh rib with the sternum, directing it upward and slightly outward Rehn advises preliminary puncture with a fine needle In the author's second case the bullet had entered and lay free in the pericardial sac Pericardiotomy and removal of the missil were performed, principally because of signs of effusion in the pericardial sac

Pathology and Surgery of Gaucher's Disease—Diagnosis of Gaucher's disease is made by histologic examination of the removed spleen Bone marrow puncture is an adjuvant The combination of bone foci and splenic enlargement justifies the diagnosis of Gaucher's disease Involvement of the head of the femur and of vertebral bodies is of importance in differentiation from Perthes' disease and from tuberculous spondylitis The author's studies of microscopic preparations support Pick's view that Gaucher cells are derived from reticulum and from the clasmatocytes of arterial adventitia and not from sinus endothelium The disease is regarded as a metabolic disturbance with deposition of Gaucher substance (kerasin of Lieb-Epstein) in the spleen, liver, lymph glands and bone marrow It is noteworthy that after splenectomy this substance may continue to be produced in the bone marrow The study of postoperative results revealed an appreciable number of cures, as well as cases in which bone destruction developed The results of forty-one splenectomies were studied There were eight deaths Less than 50 per cent of the patients who survived were apparently cured for from one to thirteen years In ten, the operation was a failure In spite of poor results, splenectomy remains the only effective measure in the control of the hemorrhagic diathesis Patients with marked bone involvement should not be splenectomized

Surgical Treatment of Angina Pectoris—In four of the author s eight patients, operation brought complete and lasting freedom from attacks Three died and in one no improvement was noted He studied 127 surgical cases reported in the literature, together with his own eight cases, and sums up the modern status as follows (1) The operation gives good results in 65 per cent of cases, indifferent results in 17 per cent, and a mortality of 13 per cent One half of the fatal cases are to be attributed to heart failure The greatest mortality resulted from complete sympathectomy Ten patients died later from progression of the disease In twenty-seven cases a permanent and excellent result was observed for from six months to nine years (2) Partial sympathectomy gave 626 per cent of cures, as compared with 56 per cent obtained with complete sympathectomy Results were unsatisfactory in 9 per cent, as compared with 18 per cent from total extirpation Experimental as well as clinical observations seem opposed to complete sympathectomy for angina pectoris In his opinion, superior cervical sympathectomy under local anesthesia gives the best results Removal of the stellate ganglion is poorly borne by a degenerated heart Superior cervical sympathectomy gave 80 per cent of successes and a mortality of only 10 per cent (3) The operation of isolated depressorectomy is not to be recommended, because the nerve itself is inconstant in location and the results are poor It is better to combine superior cervical sympathectomy with depressorectomy The author s experience speaks for the efficiency of sympathectomy In two patients operated on under local anesthesia during an attack, he observed cessation of pain on section of the sympathetic (4) Complete extirpation of the superior cervical ganglion was followed by facial neuralgia in 36 per cent of cases To avoid this unpleasant complication the author advises his method of sectioning the ganglion in the center, slightly above the origin of the superior cardiac nerve leaving the upper half undisturbed (5) Sympathicotonic angina pectoris is differentiated into a right and a left sided variety, each to be combated by operation on the corresponding side Angina of bilateral origin calls for bilateral sympathectomy, to be carried out, however, in two stages The operation is recommended for severe cases in which internal treatment has brought no relief Complete decompensation, myocarditis and heart failure are contraindications to operation The operation is not contraindicated in beginning coronary occlusion or in syphilitic aortitis With the latter however, operation should be resorted to only after failure of antisyphilitic treatment

Anatomic Study of Ischemic Contracture of Muscles—The musculature of the arm in a child is poorer in blood vessels than in an adult The collateral circulation of the flexors of the forearm was shown by anatomic study and injections to be less competent than that of the extensor muscles These causes explain the more frequent occurrence of ischemic contractures in the young and the greater vulnerability of the flexor muscles

Internal Pseudohermaphroditism, Male Cryptorchism and Congenital Inguinal Hernia—Von Seemen reports the case of a male, aged 18 of normal masculine habitus and well developed secondary sexual characteristics, who presented cryptorchism of the right side and a congenital inguinal hernia on the left When, at operation, the hernial sac was opened, a testis, epididymis, uterus with the broad ligament and left fallopian tube were found Further exploration demonstrated the presence, on the right side, of the right testis, a tube with fimbriated end and a broad ligament There was a well developed uterine artery Both tubes were patent and the uterus continued into a patent vagina The case belongs to the rare type of internal masculine pseudohermaphroditism

Klinische Wochenschrift, Berlin

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New Test for Early Pregnancy—This test consists of injection of from 1 to 2 cc of morning urine into young mice and noting the effect on the ovary Castrated adult mice are used as controls In pregnancy the urine contains a large amount of the hormone of the anterior lobe of the pituitary, and if the urine injected is from a pregnant woman, the young mouse ovary will exhibit the effects of the hormone Aschheim and Zondek applied the test in seventy-eight cases of pregnancy It was unquestionably positive in seventy-six and positive on the second test in one of the remaining two By this method it was possible to diagnose pregnancy as early as five days after the first missed menses In 236 controls, the reaction was weakly positive in three cases of severe endocrine disturbances (myxedema and acromegaly) in one fifth of the cases of genital carcinoma, and in two persons without demonstrable endocrine disturbance or cancer —a woman, aged 47, and a man

Mechanism of Acid-Alkali Regulation in Normal and Disturbed Renal Function—Rosenberg and Hellfors found that the absence of the expected increase in the hydrogen ion concentration in the urine in persons with renal insufficiency after peroral administration of alkali, previously demonstrated by them, is due to disturbance in the acid-alkali exchange between tissues and blood Presumably, the administered alkali is retained by the tissues They determined further that in persons with properly functioning kidneys, the urinary ammonia curve falls steeply when the system is loaded with fixed alkali, whereas, in persons with renal insufficiency, its course is either entirely irregular or upward The explanation of this paradoxic behavior is, presumably, that in the tissues of the azotemic organism, impoverished of its alkali, the administration of fixed alkali results in setting free ammonia that has been used in the tissues for the neutralization of acids

Paroxysmal Hemoglobinuria—Witebsky's researches showed that the hemolytic action of the serums of patients with paroxysmal hemoglobinuria is not group-specific The hemolytic agent was effective on the cells of all the blood groups He further demonstrated that the hemolytic antibodies in paroxysmal hemoglobinuria are not identical with the lipoid bodies that give the Wassermann reaction

Monatsschrift f Geburtshulfe u Gynakologie, Berlin

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Idiopathic Diarrheas of Pregnancy—Seitz cites two cases to show that diarrhea may occur in pregnancy on a basis similar to that of vomiting, the difference being that in the former instance the vegetative nerves in a condition of hyperexcitability are in the intestine rather than the stomach

Pure Mitral Stenosis and Pregnancy—The views of gynecologists regarding pregnancy with pure mitral stenosis are in need of revision, Gerich affirms He himself saw three pregnancies (two in one woman) safely completed and the mothers pass through an undisturbed puerperium in the presence of this lesion

Cesarean Section in Infected Cases of Placenta Praevia—In a case of placenta praevia complicated by severe infection of the uterus, Galkin did a classic cesarean section with longitudinal incision of the anterior wall of the uterus, and, after closure of the uterine wound, performed ventrofixation of the uterus with the uterine wound outside of the peritoneum The anterior wall of the uterus was brought into the abdominal wound and the edges of the parietal peritoneum were sutured to the anterior surface of the uterus The abdominal wound was closed as usual The postoperative course was rough, with much suppuration, but the peritoneum was spared and the patient recovered

Experiments in Culture of Human Placenta—Neuweiler found that the stroma grew first Its growth was typical and was followed by that of the Langhans cells The syncytium did not appear to take part in the growth

Monatsschrift fur Kinderheilkunde, Leipzig

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Punctate Eruption with Scabbing Following Bathing in Water Containing Potassium Permanganate B Epstein —p 41
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Congenital Syphilis and Tests of Hepatic Function—In thirteen children, aged from 1½ to 13 months, with congenital syphilis, Salomon and Schoenthal noted the blood bilirubin curve before and after energetic treatment with neoarsphenamine, for the purpose of determining liver function They failed to note any rise This was taken to mean that liver function was normal, hence the treatment is justified

Effect of Duration of Cooking on Nutritive Value of Foods—Von Graevenitz does not agree with Friedberger that prolonged cooking lessens the nutritive value of food

Treatment of Stenosis of the Pylorus in Infants—Of thirty-four cases of stenosis of the pylorus reported by Seifert, nine were treated conservatively and twenty-five surgically by the Weber-Rammstedt method Of the first mentioned group seven children died In the second group the typical pyloric tumor was present in twenty-three cases Operative treatment is preferable to medical treatment Early operation prevents inanition, late operation shortens its duration Dietetic treatment is useful only in mild cases in which considerable improvement occurs within two weeks after the institution of the treatment

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Autopyotherapy of Empyema of Infants—In a child, aged 8½ months, Flesch effected a cure of an empyema by resorting to Makai's method of injecting subcutaneously pus withdrawn from the suppurating focus The whole right pleural cavity was filled with pus The child's condition was bad Thirteen punctures were made at four and a half and six day intervals, over a period of eight weeks Each time from 0 25 to 1 cc of pus was injected into the back Complete recovery resulted without any other treatment In a second case, in a patient, aged 6½ months, nine injections were made in a period of five weeks In both cases the pus disappeared from the pleural cavity

Munchener medizinische Wochenschrift, Munich

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Life Centers in Thalamencephalon—The disturbances of function cited, which appear in diseases accompanied by rise of pressure in the third and fourth ventricles convince Hogner that the vital centers are actually situated in these cavities, and that through them the life processes are preserved and regulated

New Method for Early Diagnosis of Uterine Pregnancy—Dawydoff describes a gynecologic examination in which he uses both hands by turns The right hand within the vagina is best for examining the right half of the lesser pelvis and its contents, the left hand within the vagina for examining the left half of the lesser pelvis He introduces two fingers of the examining hand so as to get a clearer idea of the circumference of the uterus, because the middle finger can reach the deeper parts and because with two fingers it is easier to press down the perineum The right hand is doubtless more sensitive than the left, and hence by palpating the uterus through the abdominal wall with the right hand (with internal examination with the left hand) the circumference of the uterus seems greater, while the right hand palpates a greater number of points in the uterus than when this hand is introduced into the vagina

Experimental Proof of Thermal Skin Visceral Reflex—The effects on the stomach of cutaneous thermal irritation can be observed in a few moments by means of the fluoroscope Tension of the wall, as well as movement is altered The effects of warming the abdominal skin varies with the type of stomach for example, in an orthotonic and hyper tonic form, a real increase of tonus and a long-waved high discharging peristalsis with frequent opening of the pylorus may be produced Cooling causes the opposite effect in these stomachs, that is, diminution of wall tension and checking of movement Reactions in other types of stomach are discussed

Iodoform Treatment of Exudative Pleuritis—The authors treated more than thirty cases of exudative pleuritis with intrapleural injections of iodoform The results (which are tabulated for twenty cases) convince them that this method is the speediest and best In nearly all cases, and especially in the tuberculous, a severe febrile reaction appeared after the iodoform injection and lasted from two to four days Resorption of the effusion followed In no case did the serous effusion become purulent during treatment and cloudy effusions always became clearer In some cases, with normal temperature and good general condition, indurations developed Iodoform should be used as early as possible in pleural empyema as a remedy which may obviate resection

Case of Carcinoid of Appendix—A man, aged 27 years, whose case was diagnosed by Genz as a subacute inflammation of the cecum, was found to have a carcinoid of the appendix This condition is practically impossible to diagnose The disease may appear at any age except in early childhood It is most frequent in the second and third decades It is generally benign

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Diagnosis and Treatment of Coronary Sclerosis—The conclusions of Morawitz and Hochrein are based on 137 necropsies They find coronary sclerosis much more frequent than angina pectoris About 75 per cent of patients found to have extensive coronary sclerosis had never presented subjective heart disturbances Angina pectoris was seen almost exclusively with coronary sclerosis In only two cases was the aorta alone diseased Pain in angina pectoris apparently depends on several conditions, the most important probably being anatomic disease of the coronary vessels In the large group of cases of coronary sclerosis without angina pectoris cardiac asthma and fall in blood pressure or other appearances of heart weakness must be considered as giving an unfavorable prognosis The authors advise intermittent digitalis treatment, sometimes combined with intravenous strophanthin injections A complex mercury compound in intramuscular injections has also been used Dextrose injections and a mixture of papaverine hydrochloride with antipyrine have also been used by the authors with good results Intestinal meteorism in coronary sclerosis should receive the same treatment as in fermentative dyspepsia

Results of Dietetic Treatment of Tuberculosis—The series of 184 cases of tuberculosis treated by Sauerbruch and Herrmannsdorfer included twenty-three cases of lupus and skin tuberculosis, forty-five of tuberculosis of the bones and tissues and 116 of pulmonary tuberculosis The effect of diet is most evident in external tuberculosis (lupus and skin tuberculosis, tuberculosis of glands and soft parts, urogenital and bone tuberculosis) Of the patients with pulmonary tuberculosis, forty-three were not observed long enough, thirty-five were very much improved, some returning to work twenty were improved but still needed treatment, eleven were unimproved and seven died The diet used (Gerson s) must have some special advantage, as it is poorer in calories than those used at the sanatoriums One hundred and forty-six patients gained in weight 132 from 1 to 40 pounds, fourteen from 41 to 77 pounds

Strahlentherapie, Berlin

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Experimental Study of Influence of Roentgen-Ray Irradiation on Blood Sugar—Rother, in his careful investigations of the biologic reactions of roentgen-ray irradiation on a living organism, attempts to elucidate the phenomenon of blood-sugar rise The so-called indirect effects of roentgen rays are well recognized and are supposed to be the result of decomposition products of a toxic nature These enter the circulation and thus influence the reactions in question The exact nature of these substances has not been determined. Is the experimental hyperglycemia following radiation the result of increased epinephrine secretion? This effect, as well as the increase of sugar in the liver exposed to the action of rays takes place, provided the splanchnic nerve connections are not severed A liver removed from the body of an animal and perfused with blood did not react to radiation by rise in sugar content The same inhibitory effect could be produced by injections of ergotamine a nerve toxin Apparently, the vegetative nervous system is indispensable to this phenomenon The theory of decomposition toxins as a result of a direct action of rays is not substantiated by his experiments On the other hand, the indispensability of the vegetative nervous system connections in the phenomenon of blood-sugar rise supports Zondek s theory of the colloidal electrolytic nature of cells Stimulation of colloidal electrolytes by roentgen rays is the more plausible explanation of the reaction in question

Irradiation Treatment of Myoma—The author reviews cases of uterine myoma treated in his clinic during an eight year period, 1918 to 1926 In all there were 1 032 patients Five hundred and three of these were treated by irradiation with roentgen rays and 529 were subjected to operation In the follow-up study the author was able to investigate 396 women belonging to the first group The results were as follows There was not a single mortality Three hundred and sixty-seven, or 92 7 per cent, were cured Twenty-nine, of 7 3 per cent of these had to be operated on later for the following reasons Seventeen had submucous myomata, in four in addition to myomas there were ovarian tumors in three the myoma had undergone sarcomatous degeneration in two there was a necrotic myoma, in one a calcified myoma and in one diffuse adenomatosis of the uterus Out of the 529 patients operated on nineteen died, giving a mortality of 3 6 per cent Five deaths were due to pneumonia four to embolism five to peritonitis two patients died of ileus two of a myomatous heart one of sepsis, the result of a necrotic myoma It appears from his results that at least one half of all patients suffering from uterine myoma are amenable to cure by roentgen ray irradiation The two methods are not in competition with each other There exist definite indications for each Because of absence of mortality roentgen-ray irradiation is the treatment of choice in suitable cases

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Effect of Roentgen Ray on Kidney G Gabriel—p 601

Roentgen Irradiation of Exophthalmic Goiter—Krause made a critical analysis of 1,342 cases treated with roentgen rays The percentage of cures was 80, that of failures 18 In 5 per cent of the cases the symptoms have become aggravated These results compare favorably with available surgical statistics Thus Glasafeld, in a study of 2 032 cases submitted to operation, reports 82 per cent of cures and a mortality of 5 4 per cent It appears that the results obtained with roentgen-ray irradiation are about as good as those obtained from operative measures Acute cases characterized by rapid loss of weight, pronounced tachycardia and nervousness constitute very grave surgical risks It is in these cases that brilliant results are accomplished by careful roentgen irradiation controlled by basal metabolism determination

Radiotherapy of Cancer of Uterus—Hoed's report embraces the first ten years of the cancer research institute at Amsterdam Patients were carefully followed for from seven to twelve years The following conclusions are drawn A certain percentage of cases of inoperable cancer of the body of the uterus can be permanently cured by irradiation, provided that there are no metastases and that the neoplasm has not invaded the neighboring tissue to a marked extent Irradiation of a small field at one time gave better results than the Dessauer method More recent experience suggests that better results can be obtained from the combination of large doses of radium, from 4,000 to 7,000 mg, combined with a not too powerful exposure to roentgen rays Operation for cervical carcinoma should be followed by irradiation Cancer of the body of the uterus should be operated on, if possible In roentgen rays and in radium we possess a powerful therapeutic agent capable of accomplishing not only palliation, but a lasting cure, in the type of cases which present contraindications to operation or which are inoperable

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Etiology and Therapy of Shoulder Pain—Intra-articular diseases of the shoulder joint are rare in comparison to lesions of the periarticular tissue The latter most frequently involve the subacromial and subdeltoid bursae, they seldom involve the muscles and tendons surrounding the shoulder joint A sudden contraction of the deltoid, such as occurs in abrupt movement of the arm, is the most frequent etiologic cause In nontraumatic but acute cases of periarthritis, the lesion is also in the bursa, the infection being carried by the circulation in furuncle, carbuncle, influenza tonsillitis, etc The inflammation of the bursa is in general serofibrinous Calcareous deposits in the bursa may predispose to acute disease Caries of the teeth and abscesses of the roots may be the causes of acute bursitis Chronic periarthritis usually comes from an untreated or improperly treated acute bursitis and consists in adhesions between the sheath of the bursa and the joint capsule Similar adhesions come after long rest of the joint following injury Shoulder pains occur in diseases of the diaphragm, of the gallbladder, in perforated duodenal ulcers, *in pneumonia, with diaphragmatic pleurisy, in neuritis* and in cardiovascular diseases If passive rotation and pendulum movement of the arm are painless, the cause of the pain is periarthritis, because this movement, if carefully performed, takes place only in the joint If they are painful, it is an arthritis of the shoulder joint Intra-articular diseases of the shoulder are treated like those of other joints The author treats acute bursitis as follows the shoulder is carefully massaged with the palm of the hand and then immobilized in a bandage moistened with a 1 20 hydrogen peroxide solution The bandage is left in place for from twelve to twenty-four hours and then the procedure is repeated Usually the pain has so subsided after four or five days that passive movement of the arm is begun When the acute pain has entirely disappeared and abduction can be performed without pain, hot air and, later, diathermy are used The symptoms of chronic periarthritis are slight painfulness in the inner side of the upper arm and paresthesias In a large number of cases, however, these disturbances are absent, although the movement of the scapula with the arm is evident The shoulder is first treated for about twenty minutes with hot air Then the adhesions are freed by forcible but careful movements After this the patient is again treated with hot air or diathermy From ten to fifteen treatments are given

Avoiding Effects in Unvaccinated Children of Family When One Child Is Vaccinated—Four young children and their mother none of whom had previously been vaccinated, developed vaccine pustules on the eyelids or conjunctiva The source of this unintentional vaccination was the oldest child, who had recently been vaccinated at school A physician vaccinating a child should find out whether the other children of the family are already vaccinated If they are not, or if they have not been vaccinated for more than seven years, he should see that all the children are vaccinated at the same time Children living in the house with unvaccinated children who have eczema, and hence cannot be vaccinated, should not be vaccinated

Forming an Artificial Vagina in Aplasia of the Vagina—Köhler reports the case of a girl with aplasia vaginae and describes the operation, which was that proposed by Schubert in 1911 From the twenty-fourth day, bougies were inserted daily because of the narrowness of the introitus The vagina retained its size Its length measured 12 5 cm There was a slight viscous secretion

High Child Mortality in Large Families—One hundred women, whose cases Friedjung chose at random from his records ,had 1,033 pregnancies Of these, 148 resulted in miscarriage and 330 resulted in children who died young Of the 100 mothers, eighty-nine lost one or more children Of twenty-four children of one mother, sixteen died, of nineteen children, twelve, of eighteen children, twelve of thirteen children, ten, of eleven children, nine, of nine children, seven, of eight children six, of seven children, six and of six children, three Friedjung discusses the cause of high child mortality, lack of air, cleanliness and care, disturbed sleep, intimate contact with disease

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Insulin in Treatment of Peptic Ulcer—Simnitzky treated twelve patients with recent peptic ulcer, six with recurrent ulcer, eight with complicated ulcer The ambulant patients were allowed their usual diet, the hospital patients, the general diet, the only requirement being the ingestion of 100 Gm of puree of potatoes at the noon and evening meals From 10 to 15, sometimes 20 units of insulin were given subcutaneously, totalling 20, 30 and, rarely, 40 units a day In the first group of twelve patients, insulin therapy produced reversibility in the tonus of the vegetative nervous system The duration of this favorable effect varies Of the six patients in the second group four have had no recurrences in nine, eleven, thirteen and fifteen months, one was not followed and one had a recurrence after five and a half months Results in the third group were also good and in all the patients insulin had a quieting effect on pain

Treatment of General Lipoid Nephrosis with Liver Diet—Noting the diuretic effect of the liver diet in a case of pernicious anemia, Porges tried the diet in two cases of cardiac insufficiency with simultaneous hepatic cirrhosis general edema and severe ascites After puncture of the ascites, the liver diet seemed to slacken the filling process, although previously all diuretics had failed It did not succeed in effecting complete drainage There was great improvement in one case of cachectic edema in secondary anemia, and in one case of alcoholic cirrhosis of the liver and diabetes with slight ascites

Zeitschrift fur klinische Medizin, Berlin

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Is Herpes an Infectious Disease? J Plesch—p 793

Forme Fruste of Hemorrhagic Purpura—From clinical observation and blood examinations in a number of cases of the forme fruste of hemorrhagic purpura Lewit and Malkowa conclude that it differs from the classic form quantitatively, but not qualitatively They cite cases showing the transition of the first into the second and vice versa In seven cases they saw the incomplete and the classic forms in the same family Their records show a strong preponderance of women over men in all forms

Lymphatic Reaction and Agranulocytosis in Lethal Sepsis—A personally observed case (with necropsy) and analysis of forty-one cases from the literature confirm Weiss in the opinion that the lymphatic reaction and agranulocytosis are not independent clinical pictures, but are rare hematologic reactions in severe septic diseases The nature of the reaction is determined by the condition of the blood-forming organs which depends on unknown factors All the patients with a blood picture which, in his opinion, showed agranulocytosis died, all those with a pronounced lymphatic reaction, without injury to the granulocyte system, recovered

Excretion of Hematoporphyrin in Urine in Chronic Lead Poisoning—Hirschhorn and Robitschek studied seventy seven cases of chronic plombism, including fifty reported on by Sternberg, and found hematoporphyrin beyond the normal limits in six In eleven cases, it was abundant, but within normal limits There was no evidence that it paralleled the severity of the symptoms, but with a relatively high urinary hematoporphyrin a decrease in the number of erythrocytes and in the hemoglobin percentage was always present The relations between chronic lead poisoning and hematoporphyrin were studied, and the authors conclude that in both chronic lead poisoning and congenital hematoporphyria the hemoglobin released by the increased disintegration of erythrocytes becomes the mother substance of hematoporphyrin

Lipoids of Blood Plasma in Internal Diseases—The results of investigations by Friesz and Szabo showed that The total cholesterol in the blood increases in icterus in cases in which the escape of bile is obstructed without injury to the liver cells, but not in other cases In cholelithiasis hypercholesteremia is found even when the patient is free from attacks and the bilirubin values are not above normal Hypocholesteremia is always present in pernicious anemia and in chlorosis In leukemia the total cholesterol is about normal in amount but the percentage of free cholesterol is below normal Cholesterol values are normal in thrombopenia and lymphogranulomatosis They are normal or irregular in cirrhosis and decompensated cardiac defects Lecithin generally parallels the severity of the symptoms in mechanical, catarrhal and arsphenamine icterus In pleiochromin icterus, anemia, leukemias, cirrhosis and cardiac defects, lecithin values are normal The lipoids of the blood do not provide a suitable test of hepatic function

Importance of Constitution in Cardiovascular Diseases—Arjeff classified 375 patients with diseases of the cardiovascular system by Pignet's index, and discovered that patients with sclerotic diseases and those with fatty heart were mostly in the hypersthenic group, and that patients with valvular heart lesions and those with cardiovascular neurosis were chiefly in the asthenic group

Zentralblatt fur Chirurgie, Leipzig

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*Strumectomy in New Born Infant M Willenbacher—p 151
Specific Lipoid Treatment of Surgical Tuberculosis W Drugg—p 153
Operative Cystoscope Without Albarran s Lever O A Schwarz—p 156

Strumectomy in a New-Born Infant —Congenital hyperplasia and strumous degeneration of the thyroid gland are not infrequent in goitrous regions Prophylactic administration of iodine to the mother is suggested These cases call for operative intervention only when pressure on the trachea is causing suffocation Willenbacher reports a case of tracheal compression in a new-born infant with imminent suffocation At operation partial resection of both lobes had to be carried out in order to relieve the pressure An uneventful recovery took place

Odesskii Meditzinskii Jurnal, Odessa

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*Thoracoplasty in Treatment of Pulmonary Tuberculosis B E Stavraki —p 207
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*Rhinoscleroma O G Kalin —p 307

Thoracoplasty in Treatment of Pulmonary Tuberculosis — When artificial pneumothorax fails to bring about collapse thoracoplasty should be performed without delay This operation obviates the complications which arise in the course of treatment with artificial pneumothorax, and which in themselves are far more dangerous than the operation

Rhinoscleroma —Kalin gives an extensive historical review of the subject and supplements it with his own observations The following deductions are drawn Rhinoscleroma is an infectious granuloma characterized by large round cells hyaline formation and presence of an encapsulated bacillus described by Frisch The specificity of the Frisch bacillus is supported by a number of immunobiologic reactions, such as agglutination, specific bactericidal property and Bordet-Gengou s complement reaction The latter he suggests, may be utilized as a diagnostic aid in more or less obscure cases Experiments with animals suggest the infectious character of the lesion Among the etiologic factors are a number of biochemical deviations from the normal, such as a marked increase of calcium in the blood and a relative increase of potassium The protease of the nasal secretions is also increased The similarity to ozena in this respect is pointed out The author believes that the further study of the bio chemical properties of the organism and of nasal secretions will elucidate the pathogenesis of this disease and lead to prophylactic measures

1 56 (Sept) 1927 Partial Index

Spread of Malaria in Odessa District G M Mittelman —p 4
*Malaria Treatment of Leukemia K Anding —p 7
Anatomic Foundation for Epidural Anesthesia A I Charugin —p 15

Malaria Treatment of Leukemia —The author injected 4 cc of citrated blood from a case of tertian malaria under the skin of a patient with myelogenous leukemia During the incubation period, there was noted a marked diminution in the number of leukocytes which decreased still further with each succeeding attack On administration of quinine and cessation of the malarial attacks, the blood picture slowly returned to the original status The author thinks that with modification of the method of malaria inoculation more permanent results will be obtained

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Malpositions of Uterus V D Brant —p 9
Diagnosis of Hematometra in a Supernumerary Uterine Horn B K Gogoberidze —p 23
Necrosis of Female Genitalia in Acute Infectious Diseases G Zomakion —p 40
*Hypnosis in Childbirth J Kalachnik —p 85

Hypnosis in Childbirth —The author reports five cases of childbirth conducted under hypnosis with complete absence of pain The best results were obtained in two primiparae, in spite of relatively few preparatory seances In multiparous patients, the labor was painless, but a degree of uneasiness existed In the author s opinion, hypnosis exercises a salutary influence on the functional phenomena of psychogenic origin not infrequently met with in pregnant women The effect obtained does not always correspond to the depth of hypnosis It is possible to secure favorable results with superficial hypnosis

Vestnik Mikrobiologii i Epidemiologii, Saratov

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Vaccination Against Tuberculosis by Calmette s Method Aksiantzev and Zacharov —p 385
Atypical Forms of Bacillus Pestis A Bezsonova —p 394
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*Sources of Infection with Scarlet Fever Streptococcus Korobkova and Mitin —p 414
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Migration of Ascaris and of Oxyuris into Intestinal Tumor in Man C P Alfeev —p 423
False Distomiasis in Liver of Man J K Shtrom —p 433

Sources of Infection with Scarlet Fever Streptococcus — Korobkova and Mitin found *Streptococcus hemolyticus* in the throats of 55 per cent of 118 convalescing patients in the third week, 42 per cent in the fourth 38 per cent in the fifth week Patients whose throat cultures yield rich *Streptococcus hemolyticus* colonies possess the greatest possibility for disseminating the infection Their incidence in the third week of convalescence was 43 5 per cent, in the fourth week 31 5, in the fifth week and later, 29 8 per cent Skin scrapings yielded a positive result in 37 5 per cent of the cases Of these, 59 per cent were found in the third week only 9 2 per cent in the fifth They also found *Streptococcus hemolyticus* in the throats of 50 per cent of contacts The air in scarlet fever wards was found to contain considerable numbers of hemolytic streptococci, the result of coughing and sneezing by patients All the hemolytic streptococcus groups, with exception of one, proved capable of yielding a specific scarlet fever toxin

Nederlandsch Tijdschrift v Geneeskunde, Amsterdam

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*Weil s Disease in Sumatra G Baermann and E Smits —p 2478
Intestinal Sand E H B van Lier and J der Weduwen —p 2495

Weil's Disease in Sumatra —Baermann and Smits studied a group of febrile illnesses with spirochetes in the blood, that they found occurring with frequency in a rubber district of Sumatra They made agglutination tests with known spirochete strains from Europe and conclude that these cases hitherto classified as spirochaetosis febrilis are all caused by the spirochete of Weil's disease The illnesses varied from mild to severe, but the authors regard them as constituting a clinical entity, identical with Weil s disease Long contact with stagnant water or with mud either direct or indirect, as through wet clothing, preceded the onset of the disease It was not shown that rats played any role in the dissemination of the infection

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Gynecology and Gynecotherapy G C Nijhoff —p 2582
*Dyspneic Children D Herderschee —p 2599
Epilation by Thallium Acetate D M Levy —p 2611
*Pituitary Function S Koster —p 2612
Psychanalysis E A D E Carp —p 2614

Cause of Dyspnea in Children —In children the cause of dyspnea need seldom be sought outside the respiratory tract Among 458 children operated on for stenosis of the larynx, organisms resembling, morphologically, diphtheria bacilli were cultured in 369 Twenty-seven children died before a bacteriologic examination could be made Other causes of dyspnea discussed by Herderschee are spasms of the larynx caused by foreign bodies, infections and abnormal nervous irritability Koplik's spots should be looked for, but, if found, the possibility of a coexisting diphtheria must not be forgotten Herderschee has never seen a case of laryngeal stenosis caused by tuberculosis or syphilis Abscesses pro duce stenosis by pressure or collateral edema Tumors of the mediastinum may cause stenosis by pressure on the recurrent nerve

Experiments in Function of Pituitary —Koster found pro nounced hypertrophy of the lobus bifurcatus (lobus chiasmaticus, infundibularis, pars tuberalis) in two dogs in which total extirpation and in one dog on which partial extirpation of the pituitary had been performed from two to thirteen and one half months previously He regards this as proof that the pituitary has an important function

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THE BUSINESS OF GETTING WELL*

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Most physicians are inclined to give the persons who come for advice credit for showing a certain amount of intelligent appreciation of well grounded medical opinion. Of course, they realize that there are individuals of less discriminating taste who pass the physician by and knock at his neighbor's door where good money is paid for an inferior type of service. The least exacting may even enter the building next door and traffic with a naturopath, a dispenser of Abram's mysteries, or perhaps one of the more distinguished brands of the healing cults. It is not my intention while trespassing on this delicate ground to appeal to professional jealousies but rather to attempt to penetrate the workings of the public mind when it goes about the business of getting well.

There are three emergencies in life in which the average human being is prone to ignore precept and resort to instinct. The siren's song is particularly sweet and alluring when the voyager's mind is bent on marriage, money or medicine. Society, which recognizes its obligations to chart dangerous reefs and to protect the individual from his most obvious follies, attempts to fulfil its obligation by legislation.

The traffic regulations in marriage are a continuous source of controversy. It seems difficult to keep down the speed limit and to prevent the alarming increase in clashes and mishaps. Apparently society shirks any responsibility as to selection in marriage. Either it holds a low opinion of eugenics as a science, or it realizes the futility of opposing so fundamental an idiosyncrasy. Other phases of marriage show more evidence of well intended interference, but society is still seeking an answer to the old question of how to convert a union of unknown ingredients into a perfect solution, when experience so often shows an unstable emulsion or even an explosive mixture. It is becoming increasingly apparent that even a constitutional amendment cannot accomplish the impossible.

Society is more dependable in its attitude toward property. It has shown a definite desire to protect the fool and his money. Gambling and lotteries, time honored methods of separating the optimist from his earnings, are under the ban. There are laws against fraud and the confidence game, and statutes are provided to prick the investment bubble before it has time to soar and carry away the savings of the unsuspecting.

In medicine, however, or, to put it more accurately, in the treatment of the sick, the attitude of society seems to be largely neutral. It has shown no great reluctance to accept all comers in this field of endeavor, and new schools of healing are given a cordial welcome. The conclusion seems almost justified that society regards medicine largely as a business, and, since science is the servant and not the master of business, it not infrequently comes about that science is used merely to bait the hook, or is omitted entirely.

As a license is required in almost all professions some form must be provided. Following old traditions there must be a school and a diploma. The school may be founded on almost any theory, and since theories are not patentable, no proof of plausibility or usefulness is required. The doctor of this or of that is merely required to practice under the trade mark and standards of his guild. After complying with these simple restrictions, the practitioner of almost any theory of healing is licensed to do battle with disease and disability for cash. This situation is in many respects uniquely American, evolved by American genius, as we may recall, it was Yankee shrewdness that discovered the wooden nutmeg and the gold brick, and it was Barnum who proclaimed the "one a minute" birth rate. Our newer cults of healing do not seem to be in any great demand among enlightened foreign nations. The export trade is said to be limited. In England, France and Germany the use of the term "Doctor" in the treatment of the sick is apparently restricted to graduates of the regular school of medicine.

Danger to life from accident demands prevention and treatment, the need is sufficiently obvious to preclude argument, but it is difficult to arouse any spirit of cooperation or even of interest when the more insidious and more deadly preventable medical hazards are concerned.

Not much assistance can be expected from politics. Health issues have little vote-getting value. The average state or city health department has limited authority and can hardly be considered as influential. Legislative bodies are too sensitive to votes to interfere with any courage in public health matters. Education of the public will in time provoke more intelligent health legislation, little can be expected of efforts to reverse the process. It seems a little odd that a state legislature will appropriate money out of taxation to maintain a medical department of a state university, finance state hospitals in which only graduates of approved medical schools are employed, and at the same time grant licenses to practitioners of healing which are based on degrees which its state university does not accept or recognize. We have every reason to look to the university to wield a strong influence for medical standards based fundamentally on science. We should expect the university graduate to have an intelligent understanding of the basic value of physiology, bacteriology, pathology and chemistry, and to support only those organized efforts to prevent and cure disease which utilize them. A university whose graduates do not believe in the germ theory has good cause to doubt the quality and efficiency of its teaching methods. We cannot expect every graduate to become a scientist or a scholar, but we can reasonably expect him to ask proof of the important facts offered to him and to weigh those submitted with some intelligence. It must be admitted, however, that college graduates are frequently among the enthusiastic followers of various cults of healing. Obviously it is not the loss of their patronage that I venture to deplore, it is the apparent repudiation of the sciences which are the corner stones of all universities.

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* Presidential address read before the Western Surgical Association, Omaha, Dec 8, 1927.

In the proportion of study and research as compared to practice, and in the results attained, medicine has kept faith with the spirit of progress. The standards of medical education have been consistently raised, apparently more in response to scientific ideals than to any demand of competition or public opinion. There are, of course, many defects that are in need of a solution, but they are not the issues which commonly attract the public eye. The dollars and cents of life and death are undoubtedly the most prominent causes of dissatisfaction. The humanitarian and economic aspects of existence seem to be only distantly acquainted.

Two recent articles in prominent magazines voice a complaint on the high cost of sickness, and they virtually ask that the physician be indicted. It is doubtful whether the question of the cost of medical and hospital service deserves the prominence it receives to the exclusion of other phases of this "business of getting well." It would seem reasonable to put the necessity of preventing disease and unnecessary deaths first in importance. The task of curing illness and alleviating suffering and disability might properly come second, and then it would be in order to consider methods of reducing the cost. At least, the three aims might receive equal attention.

The inequalities of life, as represented by sudden disaster to the individual, and financial burdens out of proportion to earning power, are not limited to sickness. Fire, flood and violent death strike without justice or mercy. They demand a solution, and insurance has been suggested as a palliative. Society, however, in the matter of the financial burdens of medical aid is inclined to turn first to the idea that hospitals and physicians must accept a cut in pay. A recent article suggests as a remedy something like the mass production which is the basis of manufacturing economy. The "cost plus 5 per cent" idea—with endless belt conveyors and standardized parts—will never satisfactorily apply to medicine any more than it would to religion. Mutual understanding and cooperation will greatly reduce the work and the cost, but purely commercial methods, which disregard the humanities, will never meet the situation.

The present vogue of adding machines, potential values and budget systems is perhaps responsible for the popular way of urging health needs on the basis of the cash value of the individual on the auction block. This may be the only type of reasoning that will impress the present commercial age, but it may also prove to be a boomerang. If the market value of life goes down through overproduction and lack of employment, we find that our arguments for protecting life have been taken away, and we may even find our logic suggesting the primitive device of disposing of the young, the old and the disabled. There seems to be a feeling that the cost of sickness should take its place with clothing and amusements in the allotments of the budget. We can imagine the ultramodern family cutting off the 2 per cent allotted for surgical operations and transferring half of it to the funeral sinking fund and half to amusements. Probably some form of insurance is the needed answer. That will fit nicely into the budget system. By all means let it be thorough and efficient, with some such basis as that used in fire insurance. The premium must depend on the value of the property; the premises must be inspected at frequent intervals, the necessary repairs ordered and the order complied with. All unnecessary hazards must be removed by vaccination and prophylactic injections. Instructions as to diet must be observed on penalty of termination of the contract, with the cost of the premium to vary with the water supply and sanitary standards of the community in which the insured resides. There are some charms to this idea of commercial efficiency.

The medical profession seems to be the natural target for socialistic ideas. State medicine or some form of group practice which will cost very little—at least to the individual—are constantly being brought forth. The war against disease is, of course, a perpetual one, and perhaps we cannot expect the dictum "Win the war at any cost." However, it is equally impossible to ignore the war at any cost.

Our great educational foundations have contributed liberally to the medical colleges. Other agencies and many individuals have aided the hospitals, but the average member of society shows little interest in the machinery or equipment of the medical service. It might almost be said that the physician is "without honor" and without authority except in the sickroom. The public health service stands ready to aid in any emergencies but is otherwise largely ignored. It seems likely that the popular idea that medicine is largely a business may be responsible for this indifference.

It might be well to return here to the deficiencies of medicine. No doubt justice will be tempered with mercy in this case. I shall dismiss fee-splitting and other gross forms of commercialism with the expressed hope that they are growing feeble and are nearing the irreducible minimum. The problem of promoting postgraduate growth throughout the medical body appears to me to be one of the greatest needs. The standardizing of medical schools and the tightening of restrictions by state boards has raised the quality of those who enter practice. How may efficiency be raised, or at least be prevented from declining in the individual case? The hospital aims to maintain good work within its walls and to dispense a certain amount of education to its staff. The multiplicity of societies supplies an exchange of experience which stimulates the men who are permitted and able to attend. However, attendance at out of town meetings is limited for one cause or another to a minority. Postgraduate courses are a very necessary means for reeducation of the man of limited opportunity and ability, but they are either not used or are not available to a sufficient number. I believe that this is the greatest defect in the medical horizon at the moment, particularly if we are to defend the position that medicine is primarily a profession of scientific ideals and not a mere means of making a living. Of course, there are barnacles who have no wish to change their fixed existence, but I think it can be said to the credit of medicine that the great majority are anxious to do better work and could be enlisted in postgraduate work by an organized campaign. The public welfare demands that every physician be offered opportunity and encouragement to share in the progress of science. I realize that much effort has been expended along this line and that much has been accomplished. I know of no other field of public service in which such constant effort is being made to keep abreast of the times as in medicine, nor any in which this need is so imperative. I believe that societies, such as this, must assume an increasing share in this responsibility.

I find it difficult to concentrate on this "business of getting well" there are so many issues that present themselves. It had been my plan to offer as a main contention the theory that it was the public that needed education. It was in my mind to accuse the average American of being a poor partner in this matter of health, of showing poor judgment in the choice of his healers, of complaining of the high cost of illness and then wasting his substance on the worship of false gods and of being an accessory before the fact in harboring unfounded superstitions and prejudices. Given a picked jury I believe that I could convict him. Being an average man, he is sure to have failings. Something ought to be done about it. Of course, it must be admitted that the indictment has been urged with a whole hearted enthusiasm. I do not wish to imply that medicine is passing through a dark age, or that the public is entirely unresponsive to the efforts and aims of orthodox medicine. The remarkable progress that it has been our privilege to witness in the last quarter century could not have been attained without the loyal faith and generous assistance of a large and influential following. The many large associations in which laymen and physicians labor side by side for the alleviation and prevention of suffering mark a decided step forward in public support. The improvements in our hospitals, institutions for research, and medical and training schools are further evidence. With this concession to the accused public, I feel justified in returning to the charge.

A lament on the way the world is wagging that does not point any effort to better it is rather sterile. I am not sure that I can escape this implication by merely suggesting that society needs education. There are two common vehicles for administering the remedy: publicity and propaganda. I assume that there is a difference. The word "propaganda" has a sinister sound and is apt to convey the idea of an ulterior motive to be attained in a devious way. Yet it may also imply educational methods not too obvious to defeat their own ends. The lay newspaper and magazine are the tools with the best cutting edge, though difficult to borrow and hard to guide.

Public opinion is aroused and swayed to some extent by natural progress, but to a far greater degree by publicity and propaganda. Commerce and politics take full advantage of modern methods for reaching the masses. Individual or collective advertising to further the commercial side of medicine is obnoxious and unthinkable—it is almost a distinctive brand for charlatanism and quackery. On the other hand, organized efforts to further public health and preventive medicine cannot have any selfish or ulterior motive. Preventive medicine carried to the vanishing point would theoretically abolish the practice of medicine. We cannot visualize any such utopia, but all of us are committed to the ideals and practical methods that lead toward such a goal.

Propaganda through the press does not appeal to the average medical organization. The best type of medical man instinctively holds himself aloof from the newspaper. To be sure, the light of the press is directed downward almost as much as it is upward. It is destructive to social progress, as well as constructive and the illumination is seldom pure or high in ultraviolet rays, but no one can deny its penetration or doubt that it is the beacon of the everyday man. Scholars and scientists have a deep distrust of the flippant touch of the daily sheet. They have no patience with the omissions distortion and inaccuracies common to the public press. I believe that we see only the fallacies and ignore certain hard facts. The reporter has a cold but accurate view of what constitutes news. He is a trained specialist and has a deep aversion to wasting printed space. He knows that the reader and not the author is the one to be reached. It is obviously poor practice to print a paragraph or a headline that lacks general interest. There must be an active cooperation between the news reporter and the medical journalist—a fusion of ideas—if medical matters designed for public consumption are to pass through the double filter of indifference and misunderstanding.

A characteristic advertisement in the press states or implies that 95 per cent of human ills are the direct result of anatomic maladjustments which can be satisfactorily arranged by application at the right quarter. We can hardly hope to duplicate the clarity and optimism of such statements. It is one of the handicaps of our profession that our limitations and failures are so much more evident. We might, however, prevent some of the misapprehension that appears in the press regarding our own patients. We may often read that a prominent citizen died at the hospital following an operation. Baldly put the assumption is obvious. Shivers of apprehension run up and down susceptible backs at the thought. Some of this dark surmise might have been saved by a fair statement to the effect that death was due to intestinal obstruction and that operation was unavailing. Many notices are garbled into complete misstatement. The medical profession has such a reputation for secrecy that Dame Rumor often supplies the reporter with his text. The wishes of the patient or the family for reticence must be respected, but I believe that in most instances they would sanction an informing statement if they recognized the significance. The surgeon or the physician should take more interest in the information that goes to the press. I am aware of the usual arguments against the use and abuse of press notices, but I think we ought to give heed to a common lay statement that the profession which talks the most about ethics is the one in which jealousies and recriminations are most noticeable. We can well afford to revise our ethics and let more light both in and out.

As for propaganda, the magazines carry many articles that are frankly antagonistic to medicine. I see no reason why the needs, achievements, successes and failures of medicine should not find a place in them. Public reserve is being rapidly abolished and it has become quite the natural thing to call a spade a "spade" in the public print. In fact, it has almost become a fashion. Language may be too technical, but apparently any subject can be satisfactorily discussed in everyday publications.

The life insurance companies may be expected to launch extensive campaigns of education to combat unnecessary death rates. The large industrial organizations realize and energetically practice the demonstrated conclusion that good medical supervision service and education show a profit in the production columns Both of these activities are of great educational value

There are so many avenues for education and propaganda that only those well versed in such matters can intelligently point the way, but we can guess that every ardent propagandist must look wistfully at the Niagara power of the movies that flow unharnessed past our eyes We need a DeMille—a whole troop of them—to present the tragedy, the drama and the fairy tales of medicine They are ready at hand for the genius who can transfer them to the screen We can easily think of the tale of the sleeping princess of Cretinism—the story of the giants and the dwarfs and the misshaped, confined in the dungeons, who are waiting for the magic touch to resume their normal places and forms, the vision of the benign genii of the sunshine bottled behind window panes, the triumph of the culture tube revealing the invisible death which so often enters only through the doors of ignorance It does not require a very facile imagination to foresee the value of such a weapon in the battle for health if only we can discover the champion who will pull this sword from its sheath

20 North Tejon Street

ENURESIS [*]

JOSEPH K CALVIN, M D
CHICAGO

So much has been written about the subject of enuresis that it might seem superfluous to elaborate on it further However, the most valuable contributions have appeared in psychologic and mental hygiene journals which, as a rule, are not read by the general practitioner, who depends on the regular medical periodicals for information Yet it is the general practitioner, not the psychologist or psychiatrist, who must treat most of the cases of enuresis This article is an attempt to supply the missing link and to correlate the physical and psychic aspects of the problem

Such statements as the following certainly indicate that the medical profession still considers the condition a bugaboo Davison[1] says, "Much has been written but relatively little known of the condition which distresses mothers, shames children and frequently baffles physicians " Woolley,[2] a children's psychologist, states that "many pediatricians feel quite hopeless about cases of enuresis in which no physical difficulties are discoverable that they have found no successful way of dealing with such cases " Unfortunately, it is true that many physicians dread to see a patient with enuresis come into the office or to the clinic because of the unsatisfactory response to the usual treatment In fact, many physicians are using the very antithesis of the proper methods in handling such cases and actually do harm Nevertheless, the condition occasions so much discomfort and annoyance to the entire family that strenuous efforts on the part of the mother are usually attempted to eliminate it, and she demands that something be done about it

This paper is the result of considerable personal experience gained in the conduct of a dispensary enuresis clinic, and through consultation with authorities investigating the psychologic aspects of the subject

ETIOLOGY AND INCIDENCE

Enuresis is of common occurrence and a widespread difficulty Most cases have continued from infancy, although some few are acquired following illness or unusual excitement Most children have enuresis only at night (nocturnal), but some have incontinence during the day (diurnal) also

Anatomic Theories—Various theories regarding anomalies of the bladder and its innervation have been advanced to account for enuresis Among the conditions held responsible are weakness of the sphincter, hyperexcitability of the trigon, abnormally powerful detrusor muscles, spasm of the bladder and bladders of small capacity, sensory disturbances (changes in reflex arc) with inability to feel bladder contractions, and atony of the bladder For a more detailed discussion of these theories, Zappert[3] should be consulted Suffice it is to say that as most cases can be cured without anatomically correcting these supposed defects they may be considered as overrated in their importance numerically

Heredity plays a role Familial bed-wetters are common The incidence is about equally divided early, but from 6 years on boys predominate

Immediate Causes—In most cases the causes of bed-wetting may be grouped under two large heads

1 Organic or physical disturbances, the more prominent among which are (*a*) diseases of the central nervous system such as idiocy, cerebral palsy, spina bifida and tumors, (*b*) internal glandular disturbances, such as diabetes insipidus, (*c*) urinary changes, as when the urine is too acid or is excreted in too large a quantity (habit of drinking too much water), or when the specific gravity relations are reversed, becoming high during the day and low at night,[4] (*d*) diseases of the bladder and kidney, such as infections, calculi and nephritis, (*e*) local irritations in neighboring organs, such as narrow meatus, phimosis, pinworms, fissures and vaginitis

2 Bad habit formation due either to lack of proper training or to an oversensitive nervous system (neurotic or emotionally unstable child) or both

The many defects in group 1 are only infrequently the causes of enuresis, and even when present, merely their correction does not usually control the bed-wetting because the habit has been too strongly established Davison[1] states that in two thirds and Holt[5] that in 68 per cent of their cases no adequate physical cause could be found Some physicians put the proportion in which no physical cause is detectable as high as 90 per cent[6] Mohr[7] did not find any specific relationship between physical defects and enuresis, but observed that many bed-wetters are in relatively poor nutritional and emotional condition and that evidence of vasomotor disturbances is more frequently noted among the enuretic children Markey[8] states that practically every case of persistent enuresis studied by him was associated with other serious behavior problems Nevertheless, in considering the possible cause of enuresis in any child, the first point to determine is whether or not there is any physical cause for the difficulty. A complete physical and laboratory examination should be made to rule out these physical causes or to correct them before starting to treat the condition as an undesirable habit.

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[*] From the Enuresis Clinic Pediatric Department of the Michael Reese Dispensary

1 Davison W C Enuresis Abt s Pediatrics **4** 867

2 Woolley H T Enuresis as a Psychological Problem, Ment Hyg **10** 38 53 (Jan) 1926

3 Zappert J Enuresis, Ergebn d inn Med u Kinderh **18** 109 188 1920

4 Friedell Aaron Reversal of Normal Concentration of Urine in Children Having Enuresis Am J Dis Child **33** 717 721 (May) 1927

5 Holt L E and Howland John Diseases of Infancy and Childhood New York D Appleton & Co 1926 pp 533 537

6 Boenheim C Zur Psychogenese der Enersis Ztschr f Kinderh **43** 211 1927

7 Mohr G Observations on Causation and Treatment of Enuresis in Children personal communication to the author

8 Markey O B The Psychiatric Approach to Enuresis Tr Central States Pediat Soc Cleveland Oct 14 1927

Before discussing the reasons for the faulty habit formation (group 2) which is the cause of most cases of enuresis, probably two thirds or more, it is well to state what seems to be the normal course of events in the infant learning to keep dry.

Training of the infant to control the emptying of the bladder may be begun as early as 6 or 7 months of age. It must be begun by the twelfth month. The mother must devote herself to the problem for from a few weeks to two months, as socializing the excretory functions is a difficult lesson. Habits of cleanliness do not come naturally. The excretory habits cannot be suppressed like other bad habits but must be properly directed instead. It becomes a business of forestalling the child and keeping him dry by taking him frequently to the toilet. The natural rhythm of urination as already established may be determined by making a chart recording the exact time, stimulus and conditions under which the infant wets, i. e., relation to feeding and napping. Then, in an attempt to follow the chart, the infant should be placed on a "chair," especially before and after feedings and naps. Steam rising from a little hot water in the chamber serves as an artificial stimulus to induce urination and thus makes the desired association with being placed on the chair.[9] No playthings should be given the child while on the chair, nor should his attention be diverted in any way. He should not be left on the chair longer than five minutes.

Teaching the child to use the chair is only the first step. Next, at about 14 months he must be taught to refrain from functioning (during the day) except on the chair. The mother should never disregard a request for attention. By eighteen months at the latest, although they may be tried at fourteen months, knit drawers or panties should be substituted for diapers. Drawers feel cold and uncomfortable when wet. By the time the child is 2 years of age, daytime accidents should be rare and a few dry nights may be expected.

After the child is trained for the daytime, night training should be attempted as follows: Restrict fluid after 5 p. m., be certain that the child urinates just before being put to bed, forestall the first wetting by awakening the child between 9 and 10 p. m. and keeping him on the toilet until he urinates, place him on the toilet as soon as he awakens in the morning. Dry nights should be the rule by the time the child is from 2½ to 3 years of age.

As soon as the rhythm and habit of urination are fairly well established, the child should be taught to feel that it is distinctly his task and responsibility to keep dry.

The chief causes of failure[2] to train the child properly and consequently the psychologic causes of bedwetting are:

1. Postponing the training beyond the natural age. This delay establishes the bad habit more firmly and also forces one to deal with a more negativistic (older) child.

2. Arousing fear concerning the ability to control the bladder. Shaming, segregating and punishment concentrate the child's mind on the difficulties of bladder control. Fear of failure may become an obsession and cause wetting. One should never use severe punishment or arouse fear in connection with the use of the toilet. A mishap should be treated in a casual and kindly way. Faith that he can succeed can be aroused by emphasizing the successes with much praise and rewards and not mentioning the failures. Lack of faith in the child should never be expressed.

3. Arousing a feeling of antagonism as a result of the spirit of the training. Negativism should be avoided by not dominating unduly and unreasonably and by not being impatient and inconsistent in one's methods. One should avoid making the toilet a battle ground for discipline. Children will then wet merely to annoy and get their own way.

4. Emotional scenes on the part of the mother or nurse concerning the use of the toilet, such as showing great concern over accidents, weeping, or petting or coaxing excessively. Children love emotional scenes which make them the center of attraction, and wetting, especially diurnal, may serve to keep them in the limelight, especially the child with an inferiority complex who has difficulty attracting attention by normal means.

5. Excessive "babying" by overaffection. This may lead the child to attempt to continue the period of infancy and enjoy maternal care.

6. Masturbation, which may be associated with enuresis as both conditions are frequently present in the emotionally unstable (nervous) child. Occasionally the confession and overcoming of masturbation result in the enuresis stopping also. More frequently, however, the suppression of masturbation may cause enuresis to develop as a substitution habit. Enuresis has been considered by some writers as an equivalent of sexual activity—an exaggerated pleasure of urination with premature sex personality development.[6] In any case of enuresis the presence or relationship of masturbation to the habit should be investigated, although my experience leads me to believe that the relationship has been much overemphasized in the literature.

7. Emphasizing organic ailments to the children or in their presence without sufficient basis for such statements, i. e., speaking of "weak kidneys" or "weakness of the bladder." The child may feel justified in persisting in the habit because he is sure that he has "weak kidneys" which he will outgrow when a man.

TREATMENT

The active treatment of established enuresis can be easily and successfully carried out if certain fundamental principles are adhered to. Most cases can be cured within a few weeks' time, but the utmost cooperation of the parents is essential. This "cure" must be carried out by persons who have good control of the child, have confidence in their ability to cure this condition, and can communicate this confidence to the child. The parents usually fail to meet these requirements, and so the treatment should be largely in the hands of the physician.

In the conduct of my enuresis clinic and in private practice, the following procedure is used:

1. Any physical defects such as were enumerated previously, as, for example, phimosis, should, of course, be corrected or eliminated if possible.

2. General improvement should be brought about in the physical condition by proper diet, hygiene and tonics, as many of these children are under par and anemic.

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[9] Fenton, Jessie C.: A Practical Psychology of Babyhood, 1926, p. 269-271.

3 The following general rules will aid, and will result in improvement in most cases

(*a*) Fluid (milk, water, soup) should be restricted after 4 p m The evening meal should be light and dry, i e, consisting of cereal, custard, junket, bread, jello or fruit Tea, coffee, pepper, salt and condiments should be avoided at all meals Especially should salt and sweets be avoided after 4 p m, as these increase thirst

(*b*) The child should empty the bladder before retiring and again at 10 or 11 p m, one should be certain that the *child urinates freely at these times*

(*c*) Generally speaking taken as a group, most children *who wet the bed have an oversensitive nervous* system, are high strung and very active and are not emotionally as stable as those who do not wet the bed in short, they are the so-called nervous children This sensitive nervous system probably tends to respond too quickly to impulses sent to it from the bladder, consequently, there should be an afternoon nap if possible, and no excitement or high tension after 5 p m such as exercise, reciting competitive games, loud laughter movies or exciting radio programs The child should sit down and play quietly after 5 p m He should not become too fatigued before retiring and should retire early, elevating the foot of the bed 6 inches is advisable

4 Psychotherapy through proper instruction of the mother is necessary to eliminate the psychologic causes of bed-wetting enumerated previously Certainly, in older children (from 5 to 6 years and up) fear and anxiety of committing the act [10] the suggestion acting on the child's mind that he has failed to control a nasty situation, is a prominent cause of the difficulty This type of child must be taught that the habit is not desperately tragic, and must be impressed with the fact that the trouble always gets well, and that it continues now because he is worried and keeps thinking about it The mother must kindly ignore the mishaps and praise the successes highly—a difficult attitude for these mothers to assume The problem should never be discussed in the presence of the patient In younger children especially (from 3 to 5 years), the mothers should avoid emotional scenes when mishaps occur In general, centering the attention of the enuretic child on his problem and shortcomings should be avoided One should also avoid stressing sex in the treatment if possible Psychoanalysis is rarely indicated except in adolescent children

5 After fear and anxiety and emotional scenes have been eliminated, confidence must be restored in the child that he can be cured, as usually the child and the mother have given up One should build up the faith that success can be attained and encourage each child This is accomplished largely by suggestion Usually some outside source of stimulation and inspiration is necessary The physician rather than the parent can best build up this faith in the child The physician must insist to the child that he can cure him but to drive this thought home in the child's mind it is necessary to perform some striking yet harmless procedure, i e, a hypodermic injection of sterile water [4] at the weekly visits to the physician with the absolute assurance to the patient that this will result in a "cure"

A visible record of successes is a very good method of helping to cultivate an atmosphere of optimism and confidence One *should have the mother mark the* successful days on a calendar with gold stars and give high praise, thus emphasizing the successes with commendation and reward Leave the other days blank and never mention or indicate these failures These gold star calendars should be brought to the physician's office with the patient at weekly intervals

6 Most textbooks and articles on enuresis have relegated the drug treatment of enuresis to a very insignificant place Many authors state that the main value of the drug is the suggestion of a cure to the patient and that consequently almost any drug seems to help I have found in my clinic that drug therapy is of major importance in *speeding* up the "cure," provided the drug is carefully selected to meet the indication

The Blantons [11] state that one of the fundamental underlying causes of most enuresis is the nervous, high-tensioned child Consequently, I have used sedatives such as phenobarbital in the maximum doses possible without producing lethargy If the enuresis is purely nocturnal, the drug is administered at bedtime (1 grain, or 0 065 Gm, to a child of 4 or 5 years), if diurnal it is given in divided doses three times a day The results have been remarkable The enuresis has stopped in many of the cases at once, even in the difficult cases encountered in dispensary practice The phenobarbital must be continued for at least two weeks until the habit is thoroughly broken, and then the dose gradually reduced *and* discontinued unless there is a recurrence, when the course of treatment is repeated This type of therapy tends to disprove the theory that very profound sleep with diminished consciousness of bladder contractions results in enuresis The phenobarbital *apparently* raises the threshold of the nervous system response, so that the anxiety and fear complex and other subconscious psychic factors do not make suggestions to or otherwise intrude on the deeply sleeping brain, and the high-tensioned overresponsive nerves are quieted This breaking of a vicious circle is especially successful in the nervous child but is of value in the *treatment of all patients If the first five principles* are also carried out, the chances of recurrence are slight

Atropine or belladonna in large doses will greatly help in certain selected types of cases, i e, those in which there is a frequent desire for urination during the day associated with bed-wetting at night In a series of observations carried out in our clinic, it was found that normal children when taking large therapeutic doses of belladonna urinated much less frequently in twenty-four hours, but passed about the same total twenty-four hour quantity of urine as when not taking the drug, provided the fluid intake was constant This is explained by the fact that belladonna (or atropine) relaxed the smooth muscles of the bladder and so increased its capacity to hold fluid

Changing the reaction of the urine may be of value at times

In cases of diabetes insipidus, the hypodermic administration of pituitary extract twice daily stopped the enuresis and reduced the output of urine from about 6 to 8 quarts to 1½ to 2 quarts

7 Surgical treatment in most cases is not necessary Passing of sounds and the injection of fluids into the bladder to dilate it may be dangerous from the standpoint of introducing infection and should never be done unless a definite surgical indication is present

8 Finally, the easiest method of curing enuresis, but one seldom agreeable to the mother, is to change the whole environment by removing the child to another home (boarding or nursery school) or hospital (especially in the ward) These bed-wetters almost invariably control the habit soon after being placed there, but must remain in the new surroundings for at least three weeks to obtain a permanent cure Here the motive is that they try to do as the other children do and

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[10] Cameron H C The Nervous Child 1924 pp 113 121

[11] Blanton S and Blanton M G Child Guidance 1927 pp 56 67

stand well with their fellows (be approved of) The attendants, however, should take an indifferent attitude toward the bed-wetting

I disagree with certain authorities that some normal children over 3 years of age cannot go through the night and must be awakened or taught to awaken themselves to go to the toilet in order to avoid wetting the bed This does not cure but seems to establish the habit more firmly, even though there are not as many wet sheets A child past 3 years of age without physical defects should be able to sleep through the night without emptying the bladder after 10 p m I also do not believe in the child attempting self suggestion by repeating "I am not going to wet the bed tonight," and so on This focuses his attention on the matter and arouses his anxiety Some advise making the child responsible for washing the wet sheets and changing his bed Even though this is not done in the spirit of punishment but as a natural consequence, it again makes the wetting a paramount matter in the child's life and calls his attention to his failures (a bad policy) The possible value of bladder training by interrupted urination during the day (start and stop method), as advised by some authorities, is, I believe, outweighed by the danger of concentrating the child's mind on his difficulty

Enuresis Clinic Questionnaire

Enuresis
  Nocturnal Diurnal
  Age of onset
    Continuous or intermittent since onset
  Number of nights weekly
  Number of times a night
    How soon after retiring?
    Does patient awaken?
  Frequency of urination during day
  Amount of fluids taken daily and when?
  Familial (do other children in family have habit?)
  Heredity—present in parents?
  Previous treatment and methods of control
    Fluids restricted?
    Awakened at night? How often?
    Medicines prescribed?
    Punishment? What type?
    Emotional concern?
    Arguing and rowing?
    Babying? Shaming? Rewards?
    Attitude of family
Nervous System
  Emotional condition
  Nervous high tentioned type?
  Play Active Quiet
  Disposition
  Sleep Sound? Restless?
    Sleeping arrangements
  Masturbation
  Personal habits—careless and slovenly
    careful and neat
  Progress in school
Physical Examination
  General nutrition
  Special factors bearing on enuresis as phimosis etc
Urine Examination

Directions to Mothers

The following printed instructions are given to the mothers for the treatment of established cases

Directions To Mothers

Stop all punishments or any action that will arouse fear in connection with the habit
Stop shaming
Stop all arguing and rowing and dominating unreasonably—the question of the use of the toilet should not be a battleground for discipline
Stop all displays of emotional concern and substitute an indifferent attitude Treat mishaps in a casual and kindly way so as not to concentrate the child s mind on the failures and difficulties
Stimulate interest in success by much praise ado and rewards for dry nights—avoid mention of wet nights Never express lack of faith in the child
Keep a gold star calendar of dry nights only
Stop babying the child by overaffection etc
Never mention to the child that he has weak kidneys,' etc, or that he will after years outgrow the habit

General Rules

1 Restrict fluid (milk water soup etc) after 4 p m The evening meal should be light and dry i e cereal or custard or junket bread jello fruit etc Avoid coffee tea, salt pepper and condiments at all meals Especially avoid salt and sweets after 4 p m as these increase thirst
2 Emptying the bladder before retiring and again at 10 or 11 p m Be certain that child urinates freely at these times
3 Rest An afternoon nap if possible no excitement or high tension after 5 p m such as exercise reciting competitive games loud laughter movies or exciting radio programs The child should sit down and play quietly after 5 p m The child should not become too fatigued before retiring and should retire early Elevating the foot of the bed 6 inches is advisable

Occasionally, an indifferent lazy, slovenly, indolent child must have his attention focused on the bad habit in order to cure him These are the exceptional cases, as most children are disgusted and ashamed of the habit and have tried to stop

Finally, it is to be emphasized that enuresis is really only a symptom and not a disease entity, that it is usually a functional disturbance, the psychologic causes of which may vary considerably in different instances Consequently, in order to obtain successful results, each case requires individual analysis The approach that cures one child may aggravate the condition in another Bad methods of treatment, such as punishment or fright, may occasionally temporarily succeed but incidentally may seriously harm other personality traits

I have found that a special enuresis questionnaire aids materially in classifying the etiology and treatment, and in standardizing the cases The accompanying questionnaire is used in our clinic

104 South Michigan Avenue

REMOVAL OF RIGHT CEREBRAL HEMISPHERE FOR CERTAIN TUMORS WITH HEMIPLEGIA

PRELIMINARY REPORT *

WALTER E DANDY, M D
BALTIMORE

In the gradual evolution of resections of frontal temporal and occipital lobes for the cure or attempted cure of invasive and otherwise incurable cerebral tumors, it has been found that the right temporal lobe, either frontal lobe or either occipital lobe (the left posterior to the supramarginal gyrus) could be completely removed without apparent mental impairment It therefore seemed a logical expectation that the right cerebral hemisphere might be removed with little, if any, change in the mentality of a right handed person At times patients already paralyzed on the left side from the inroads of cerebral neoplasms and without any prospect of its correction are eager to live even at the price of permanent loss of function on that side of the body, if only the mind remains undisturbed Five times during the past five years patients in this condition have urged every effort to save their lives, regardless of the physical disability In four of these patients the tumors (gliomas) had been found at operation but their removal could not be accomplished without inducing a hemiplegia The pressure symptoms had been relieved at the time of the first operation by a large decompression (removal of the bone flap) In each case the paralysis of the right side subsequently became complete

The first of these patients was seen five years ago when in coma The tumor was located by ventricular estimation and found at operation to be a glioma occupying much of both the right frontal and right temporal lobes. It seemed probable that the middle cerebral artery was incorporated in the tumor, and the ligation of this vessel would have caused a left hemiplegia. Several weeks later when the left side was paralyzed, the right hemisphere was removed, but in the region of the carotid artery the tumor had invaded the dura and this small portion could not be excised. The patient died three and one-half years later from recurrence of the tumor. He was repeatedly examined before leaving the hospital and there did not seem to be any obvious mental impairment. He was always happy and grateful for his extension of life.

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* From the Johns Hopkins University and Hospital

In a second patient, also in coma, a solid glioma was found to occupy the right parietal, temporal and frontal lobes. The bone flap was removed, and relief from pressure was afforded. At the insistence of his family, the right hemisphere was removed, but since the tumor had deeply invaded the corpus striatum, its complete removal was impossible. He died three months later of recurrence. An extensive infection had followed the operation, precluding any accurate estimate of his mental capacity.

A third patient died from hemorrhage forty-eight hours after the hemisphere had been extirpated for a recurrent glioma of the temporal, frontal and parietal lobes. A silver clip had slipped from the middle cerebral artery. Since consciousness was never regained, mental examinations were not possible.

A fourth patient died of pneumonia two weeks after excision of the right hemisphere. During all of the first week after the operation he was perfectly conscious and answered every question promptly and accurately. He was always perfectly oriented as to time, place and person. We could not detect any mental impairment from these cursory tests.

The fifth patient, a woman, aged 35, is still under observation. Her case was different from any of the preceding in that she had never had a headache, her only symptoms were gradual but rapid loss of sensation and motor power in the left side. These changes could hardly be due to any lesion other than a tumor in the internal capsule. An air injection showed obliteration of the right ventricle and slight obliquity of the third ventricle to the left. Slight movement of the left leg was still possible but she could not stand. Her brother, a physician, had anticipated the diagnosis and the eventual outlook if operation was performed. Both he and the patient were eager for a cure by immediate excision of the hemisphere rather than to have her submit to any partial effort, which would surely be followed by a recurrence of the tumor and doubtless prevent a subsequent cure. Any attempt to resect the tumor at such great depth could be done only by sacrificing the middle cerebral artery, and the results of this vascular loss, except for the absence of a homonymous hemianopia would be essentially the same as those following removal of a hemisphere. The right cerebral hemisphere was extirpated in a single mass. The tumor, a glioma measuring about 3 by 3 cm., was so well surrounded by normal brain tissue that it was not seen until the specimen was cut later. Unfortunately this patient, too, has been the victim of an infection, but she has now (two months after the operation) apparently recovered from its effects. During the high fever she was delirious oft and on for several weeks. Gradually the periods of delirium have lessened, and she is now rational at all times. She is always well oriented as to time, place and person, has a good sense of humor and seems normal mentally.

The hemiplegia in these cases is always complete in the arm and leg but only partial in the face. In one patient the facial movements seemed almost unchanged after the removal of the hemisphere. The other patients showed varying degrees of asymmetry much like the variations that follow involvement of the motor cortex by the tumor's growth. In the patient who lived three and one-half years after the hemisphere was removed, slight flexion and extension of the knee and thigh subsequently developed, but there was never enough function to be of any service. His days were spent in a wheel chair. No movements were ever observed in the arm.

The degree of rigidity in the extremities has also been variable. It has always developed more slowly and less intensely than we had anticipated. A complete flaccidity supervenes for at least several hours after the operation, and at the same time a suggestive positive Babinski reflex first makes its appearance. In none of the patients was there more than a mild rigidity during the postoperative stay in the hospital. The patient, now in the hospital, two months after the operation, only at times shows any resistance whatever on passive movements of the leg. One could scarcely say that there is any degree of rigidity of the leg. The arm shows slightly more resistance, enough to be definite, but as yet there are no signs of contracture. Both the arm and the leg lie in any position in which they have been placed. The patient, who lived three and one-half years, had a markedly contracted arm but no contracture of the leg.

Epicritic and protopathic sensation are completely lost over the arm, trunk and leg. Deep sensation is well preserved. Movement of the joints is painful, and squeezing the muscles causes pain. The patient can tell when the thigh, knee or foot is flexed or extended or even which toe is manipulated, but is unable to tell whether the toes are flexed or extended. Painful stimuli induced by squeezing the muscles of the thigh or calf cause the leg to draw up in a rather vigorous reflex movement.

Another feature of interest is the preservation of sensation in the face. Epicritic sensation, such as very light touch and differentiation of degrees of temperature, is lost, but a heavier touch and stronger differences of temperature, the proper localization of stimuli and their doubleness are recognized accurately. The corneal reflex is diminished somewhat but preserved. The motor function of the fifth nerve is intact. The tongue protrudes with slight, if any, deviation. Taste over the anterior two thirds of the tongue is apparently preserved but lessened. Hearing is normal in both ears. This we have noted by gross test in all of the cases reported, and in the last patient audiometer readings are normal in both ears. This disposes of the assumption that there is cortical representation for hearing in the right temporal lobe. A complete left homonymous hemianopia has, of course, followed the removal of a hemisphere.

The success of the operation is dependent on painstaking care in hemostasis. The middle and anterior cerebral arteries are ligated just above their origin from the carotid either with silk ligatures or with silver clips, and the vessels are divided between the ligatures

The elimination of the arterial supply of blood at once causes a considerable lessening of the cerebral bulk and makes the next step—ligature of the many cerebral veins that enter the longitudinal and transverse sinuses —much easier. Every vein that enters these sinuses must be carefully ligated before the hemisphere is removed. In the earlier cases the veins were "clipped" at the point of entrance to the sinuses, but in the last case they were carefully tied in the cortex with transfixion sutures of silk and a small triangular wedge of cortex containing the venous stubs was left attached to the longitudinal sinus. This method of handling the venous trunks is, I think, superior to that of clipping the unprotected veins, but much depends on the confidence which can be reposed in the clips. The recent use of "flat clips" makes for a feeling of greater security.

After all the arterial and venous channels have been isolated, ligated and divided, the hemisphere is gently liberated from its attachment to the falx, to the opposite hemisphere in the frontal region below the falx and to the base of the skull. We have found it better when the whole hemisphere is thus liberated from all peripheral attachments first to section the frontal lobe, which requires only a sweep of the scalpel, and then, entering the anterior horn of the lateral ventricle with the index finger, to use this as a lever. The corpus callosum is then divided at a distance from the falx (in order to avoid possible injury to the left anterior cerebral artery, which is closely adjacent). With scissors or the edge of a spatula, the internal capsule is divided flush with the ventricle. The cerebral incision is then carried through the depth of the temporal lobe to a line just external to the inner dural margin in the middle fossa. The only bleeding encountered in the removal of the entire hemisphere is through very small vessels in the cut surface of the internal capsule (requiring only a moist tampon) and several small vessels which emerge from the under surface of the temporal and occipital lobes, doubtless from the posterior communicating and the posterior cerebral arteries.

In one patient, the tumor had grown so deeply that the cleavage line through the internal capsule passed through the lower fringes of the tumor. A second excavation was then made into the corpus striatum. It was this patient who subsequently died of hemorrhage due to a faulty clip. Obviously, one cannot tell from the surface inspection of the tumor whether the entire tumor can be included in the mass extirpation. In one case the tumor was not seen until the hemisphere was subsequently sectioned. This patient should be cured. In three instances the tumor had invaded the dura. In two of these the tumor subsequently recurred. In the third, a section of dura was excised with the adherent nodule of tumor, but the patient later died of pneumonia.

This is an operation of magnitude, but it should carry a relatively low immediate mortality owing to the relatively small amount of bleeding on which shock is so largely dependent. Except for the accidental slipping of a silver clip in one case there would not have been any immediate operative mortality in the series. Although this is scarcely an operation to be advised, it nevertheless offers to those desirous of living under adverse conditions a much longer extension of life than is possible in any other form of treatment, when the tumor cannot be completely removed, and in certain tumors situated within the confines of the hemisphere, it offers a cure otherwise not obtainable.

THE PHYSICIAN AND WORKMEN'S COMPENSATION

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The introduction of workmen's compensation legislation in the United States, in 1911, opened up a new field for medical and surgical thought and practice. Industrial medicine and surgery were already beginning to assume an important position in the field of general medicine and surgery, requiring, however, a broader application of those general principles that were part of the equipment of the average physician and surgeon. Foreign countries that had enjoyed the benefits of the progressive legislation for many years had had ample time in which to evolve an adequate method for the adjudication of the claims that arose from industrial accidents. It was to this experience that we turned in framing our legislation, and though there were many differences in both local and national problems, the fundamental principles were sufficiently similar to make their utilization practical.

On the whole, this legislation can still be said to be in its infancy in this country, since a majority of the states have only in recent years adopted it. This fact probably explains the marked lack of uniformity in the laws of the various states, a condition which is to be deplored. However, changes are being constantly made and improvements are noted every year.

With the exception of the industrial surgeon and physician, the medical profession has not kept pace with these changes; its interest has always been apathetic even to the fundamental character of the legislation. When we realize how great is the toll of industrial accidents, that the total for 1927 was more than six times as great as the military casualty list in our recent war venture, we can readily appreciate the importance of our problem, not only from its legal and economic angles but from the medical side as well. It means that every physician, even though he does not make a practice of industrial work, must at some time come in contact with the compensation law in some of its phases. Perhaps this may not apply to those physicians who live in rural communities and where accidents in agriculture and domestic service do not come within the scope of the acts of those states. In the more progressive states, however, practically all employments are included within the scope of the act. When it is appreciated that many of the workers for whose benefit workmen's compensation legislation has been enacted go to make up a large proportion of the practice of the average physician, it can be readily seen how important the subject really is. However, there has been insufficient interest, and in many cases confusion exists as a result of this lack of interest. It behooves the physician to serve the best interests of his patients, these industrial workers, by familiarizing himself with the various features of the compensation laws, becoming especially acquainted with the medical provisions of these acts.

The first problem for the attending physician is to determine whether the clinical condition that is disclosed by examination can be attributed to trauma. Obviously, such conditions as fractures and lacerations do not require further consideration, but thought and study must be given to the importance of the role of trauma in the causation or aggravation of such conditions as cancer, tuberculosis, diabetes, syringomyelia, multiple sclerosis, general paralysis and cardiac decompensation. Sometimes the physician will find that the legal and medical interpretations of an accident may not jibe. Again, he may be called on to distinguish between an accident and an occupational disease. The formation of a blister from carrying a wheelbarrow, the occurrence of a tenosynovitis in the thumb of masons, the development of peripheral neuritis from the vibration of a punch press, are all occupational conditions and in most states not compensable. The classic occupational diseases, such as lead, arsenic, mercury and phosphorus poisoning, caisson disease and anthrax infections, are compensable in many but not all states.

The second problem for the consideration of the attending physician is that of medical and surgical service. Practically all states have definite provisions for medical and surgical service in the act. No specific definition of the character of the service is made except the qualification that the service furnished must be reasonable. However, other limitations may be imposed which intrinsically affect the character of the treatment. These limitations are in the financial allowance for full medical treatment and service, and in the time permitted for medical attention. In many cases the amount includes not only the surgeon's fees but also the hospital and other expenses.

A feature of the medical service rendered in compensation cases that has caused perhaps the greatest disagreement and unpleasantness between the medical profession and the employers is that of the selection of physicians. There is much to be said on both sides of the question. The physician, of course, must be guided by the statutory regulation. In the various states these are:

1. Selection of physician by employer at employer's expense.
2. Selection of physician by employee at employer's expense.
3. Selection of physician by employee if employer neglects or refuses to provide adequate service.
4. Authority to order change of physicians, if service is incompetent or inadequate:
    (a) Requested by administrative commission.
    (b) Requested by employee.
    (c) Requested by state medical board.
5. Selection by employer.
6. Panel system.

The abuses of medical service, and there are many, whether on the side of the employer's physician or the employee's physician, are the abuses that prevail wherever there is the incentive for gain. These can be properly restricted by proper administrative methods.

The question of medical and hospital fees is frequently arranged by statutory provision in various states. In some of these states definite schedules are provided which determine the exact amount for each particular item, such as visit, dressing, minor operation, major operation and mileage. In other states, the medical bills are passed on by the industrial commission or bureau.

Another cause of dispute between the medical profession and the employers is that of medical reports to insurance companies. Very few states give any cognizance to this question, but New York has recently denied payment of medical bills in cases in which medical reports are not furnished within twenty-one days. These reports are necessary, and the medical profession has been rightly criticized for its lack of cooperation in this matter.

A review of the compensation laws of the various states discloses a fair degree of uniformity in their medical schedules as to type and degree of disabilities. Nevertheless, there is still some confusion in the minds of physicians and laymen as to the exact interpretation and definition of the terms and contents of these schedules. We have therefore to consider especially the term "temporary disability" and "permanent disability," and the qualifying terms "partial disability" and "total disability." These terms have been given a different construction in different states both by statutory provisions and by the interpretation placed on them by the courts.

Temporary disability is the physical condition immediately after an accident which prevents an injured person from returning to work.

Permanent disability is the residual damage or loss of use after all medical and surgical measures have been instituted and sufficient time has elapsed to allow the ordinary consequences of trauma to disappear by natural means.

It is not always easy to prognosticate the period of temporary disability. Every man is a law unto himself. Besides the actual clinical condition other factors, such as age, psychic make-up, economic stress and social conditions, may materially affect this period. One must therefore be guarded in all but simple conditions.

It is in the estimation of permanent disability following industrial accidents that the average physician errs badly. Too often do we find gross discrepancies in the opinion of various medical men in the same case as to the extent of permanent disability that only too well emphasize the unfamiliarity with the subject rather than the wilful intention to exaggerate for personal gain. The explanation for this can be found in the fact that there is no method or basis for evaluation of the incapacities sustained in industrial accidents. True, there are existing schedules that arbitrarily fix the amount or period for a specific injury or disability. These schedules, however, are based on economic and other factors and are not comprehensive enough and do not furnish the physician with any plan to follow in evaluating those disabilities. The law may say "for total loss of use of an arm 200 weeks' compensation at $17 a week," but the responsibility of estimating what amount of loss of use is represented by an ankylosed wrist, or a fracture of both bones of the forearm with vicious union, or a section of the musculospiral nerve, falls on the shoulder of the medical profession and the statute cannot be of any help in this respect. It is perfectly obvious that to incorporate within the statute the endless permutations and combinations that comprise the end-results of trauma and to fix indemnities for each one of those disabilities would be not only impracticable but also too arbitrary and would work an injustice on the injured worker. However, it would be most practical to incorporate certain general principles to be used as a guide in estimating the extent of permanent disability, such as the role of structure, function and cosmetic result in arriving at any opinion.

The human machine is a very complex mechanism and, though we can arrive at a fairly approximate value of its respective parts to themselves and to the machine as a whole, there is still a possibility of error. We must therefore be ever mindful of our limitations in attempting to reduce variable and unstable conditions into exact entities. It is nevertheless possible to estimate and evaluate functional incapacities by a rational scientific method based on the time study of Taylor, the applied motion study of Gilbreth and the physicomechanical methods of Amar In this manner the guess is taken out of the opinion, and permanent disabilities are computed along scientific and accurate lines rather than by arbitrary rulings or compromise conferences

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THE EFFECT OF INHALATION ANESTHESIA ON INTRACRANIAL PRESSURE

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The extensive research in recent years on the cerebrospinal fluid and its circulating system[1] has demonstrated that ether, among certain other drugs, accelerates the formation of cerebrospinal fluid Dixon and Halliburton[2] have shown that both ether and chloroform markedly increase the cerebrospinal fluid pressure Whether this increase of pressure is due to an excessive formation of the fluid or to other factors remains to be determined In clinical work I have repeatedly demonstrated an elevation of cerebrospinal fluid pressure attending inhalation anesthesia when induced by ether, chloroform or nitrous oxide The elevation is probably most pronounced in the latter, and I believe that this is due to the elevation of intrathoracic pressure, which in turn produces cerebral venous stasis and diminished absorption of cerebrospinal fluid

Many surgeons, in operating on patients with increased intracranial pressure, have observed the development of profound medullary disturbance apparently inaugurated by the anesthetic, and an occasional fatality occurs, probably from the anesthetic alone, the patient succumbing before the operation is begun It has frequently been found advisable to postpone the completion of intracranial operations because of severe medullary reactions or loss of blood from the excessive venous congestion inaugurated by the anesthetic The advantages of local anesthesia in intracranial procedures are now recognized by most neurologic surgeons, though many were extremely reluctant, because of temperament or lack of experience, to attempt major intracranial operations under local anesthesia until the experiences of the past war demonstrated the safety and adequacy of such anesthesia

Shortly after the war, while making ventricular examinations in the study of epilepsy, I[3] tapped the ventricle, and before withdrawing the fluid attached a mercurial spinal manometer to the brain needle and determined the amount of intracranial pressure These ventricular tappings were done under general anesthesia, and we were astonished at the high degree of pressure encountered, often ranging from 20 to 40 millimeters of mercury In certain of these cases, a preliminary spinal puncture had shown a pressure below normal (8 mm) The average brain tumor, when sufficiently large to produce general pressure symptoms —headache, vomiting and choked disk—produces a pressure of from 30 to 40 mm , while in certain types of encephalitis and in subarachnoidal obstructive types of hydrocephalus, pressures often run as high as from 60 to 70 mm Why these epileptic patients gave such a high intraventricular pressure measurement without general signs of increased intracranial pressure was explained only after subsequent ventricular taps were made under local anesthesia, when pressures were found to be normal or often subnormal As a result of this experience, I realized that inhalation anesthesia probably was responsible for the marked elevation of intracranial pressure Though neurosurgeons had for several years recognized the marked advantages of local anesthesia over general inhalation anesthesia in intracranial surgery, we did not suspect the difference to be due to pressure changes Under inhalation anesthesia it had commonly been our experience, even after the removal of large brain tumors, to find it impossible to close the dura because of the rapidly developing cerebral edema and we were exceedingly grateful for Weed and McGibbon's studies in dehydration which provided us with a method of shrinking the brain, making satisfactory closure of the dura possible Under local anesthesia such experiences are exceedingly rare while under inhalation anesthesia they are the rule rather than the exception

The central nervous system is contained within the rigid cranium and spinal canal, completely lined by an inelastic dura which is incapable of expansion to meet increases of intracranial pressure, therefore any increase in brain, blood or cerebrospinal fluid volume must be compensated by a reduction in the volume of one or the other of these elements If there is an enlargement of the brain through inflammation or new growth, compensation is made by a reduction in the amount of cerebrospinal fluid and blood volume The cerebrospinal fluid, which fills the ventricles and completely surrounds the central nervous system, is a great pressure adjustment mechanism because of its rapid secretion and absorption In intracranial new growths, adjustment is made up to a certain point by displacement of cerebrospinal fluid, and many brain tumors attain enormous size because of this compensating effect before producing general pressure symptoms If a tumor is located in a region that compresses the ventricular outlet, producing hydrocephalus pressure signs are exhibited at a much earlier period because the cerebrospinal fluid space adjustment mechanism is impaired In hydrocephalus due to an organic block of the ventricular or subarachnoidal cerebrospinal fluid circulating system, the pressure adjustment mechanism of the cerebrospinal fluid is not available and compensation is obtained at the expense of circulation and pressure atrophy of the cerebral hemispheres as the dilatation of the ventricles proceeds If the onset of such an obstruction is slow, circulatory adjustments take place in the medullary centers which permit a prolongation of life, though blindness and cerebral disturbance supervene In acute increases of intracranial pressure, the cerebrospinal fluid pressure adjustment mechanism is effective until most of the fluid has been crowded from the ventricles and the subarachnoid space, at which point adjustment possibilities become exhausted and the cerebral and medullary circulation becomes impaired

The cerebrospinal fluid is formed within the cerebral ventricles and is elaborated by the choroidal plexus It passes through the ventricular system, which it leaves by way of the foramina of Luschka and Magendie located in the roof of the fourth ventricle, and enters the subarachnoidal system It is then at first contained in the large cisternal dilatations of the subarachnoid system at the base of the brain and passes in the spinal canal and over the cerebral cortex, from which its absorption takes place into the venous system by a process of filtration through the microscopic arachnoidal villi along the venous sinuses, as Weed[4] has amply demonstrated Any block occurring in the cerebrospinal fluid circulating system, whether in its ventricular or subarachnoidal portion, will produce an increase of intracranial pressure through fluid retention—hydrocephalus—as will any occlusion of the absorptive mechanism (the arachnoidal villi filters), which may be plugged by filtered out blood cells If there is an obstruction to the escape of cerebral venous blood through a sinus obstruction, there will be a corresponding increase in intracranial pressure, as a result of venous engorgement and stasis, which also retards cerebrospinal fluid absorption Any agent producing a stasis in the cerebral venous circulation will produce an increase of intracranial pressure, which may be readily demonstrated by the Queckenstedt test as follows During a spinal or ventricular puncture, if one jugular vein is compressed, a normal cerebrospinal fluid pressure of 8 mm of mercury will be elevated approximately to 16 mm If the two jugulars are simultaneously compressed the cerebrospinal fluid pressure is raised to 24 mm This elevation of pressure usually occurs within thirty seconds of the venous compression and, if compression is maintained, obstructing the return flow of blood from the brain, the cerebrospinal fluid pressure continues to ascend and is followed by profound cerebral disturbance resulting in headache vertigo, excitement, tremors and even convulsions If during spinal or ventricular puncture the patient strains, there is an immediate elevation of cerebrospinal fluid pressure because of an increase of intrathoracic pressure which by compression of the thoracic veins interferes with the return circulation from the brain with an effect similar to compression of the jugulars Therefore, it is necessary, when ventricular or lumbar cerebrospinal fluid pressure determinations are made, that the patient remain relaxed and with the mouth kept open to prevent an elevation of intrathoracic pressure

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Inhalation anesthesia often, because of the irritating effect of the anesthetic, is accompanied by prolonged straining and vomiting During the stage of excitement the rigidity and straining of the patient are often pronounced, and the marked venous stasis is evidenced by congestion in the veins of the scalp, face and neck When the elevation of intrathoracic pressure is maintained for many minutes by a struggling patient, the acute cerebral venous engorgement accompanying the initial irritation of the anesthetic tends to produce further straining and vomiting The flushed face in the later stages of anesthesia is often the reaction of an increased blood pressure inaugurated by a disturbed medullary circulation caused by congestion, and in intracranial surgery both venous engorgement and the induced hypertension of compensating circulatory adjustment add considerably to the loss of blood

In patients with a marked elevation of intracranial pressure in whom the cerebrospinal fluid pressure adjustment facilities are exhausted and the cerebral circulation is seriously affected, any further sudden increase of intracranial pressure due to an induced cerebral venous engorgement attending the irritation of an inhalation anesthesia may be accompanied by almost immediate disastrous effects, or result in a profound cerebral edema, which is responsible for much early operative mortality I have in two cases, in which previous ventriculometry (local anesthesia) had shown pressures of 30 and 36 mm of mercury, attempted the removal of a brain tumor under general anesthesia The pressure obtained on tapping the ventricles after the induction of inhalation anesthesia, and before the skull was opened, revealed a further elevation of 15 and 20 mm In each instance, the tapping of the ventricle became necessary because of impending medullary failure This is a condition I have not experienced with local anesthesia in a large series of intracranial operations As a result of these experiences, inhalation anesthesia has been entirely supplanted in my service by local or combined colonic and local anesthesia Ether used by the rectal method does not cause serious elevation of intracranial pressure, though there is undoubtedly some increase of pressure

In inhalation anesthesia, the elevation of the intracranial pressure is intensified in proportion to the degree and length of the irritative stage, and is due primarily to the raising of the intrathoracic pressure and the resulting cerebral venous stasis, which, in turn, by interfering with cerebrospinal fluid absorption, cripples this important pressure adjustment mechanism Furthermore, the venous congestion of the choroidal plexus probably incites an increased production of fluid The complications attending anesthesia for intracranial surgery have been reduced by procedures which tend to shorten the stage of irritability and to insure "even" anesthesia, and undoubtedly these efforts have resulted in the development of that anesthetic skill which is so conspicuous in some of our American neurosurgical clinics, though even in the hands of a skilled anesthetist experienced in the induction of anesthesia for intracranial work, cerebral edema and medullary disturbance are of common occurrence An anesthesia conducted with a marked or prolonged irritative stage will so jeopardize an intracranial invasion that it becomes a condition calling for serious consideration In craniocerebral injuries with hemorrhage producing marked acute pressure symptoms calling for operation an inhalation anesthesia, with a further sudden elevation of intracranial pressure, may convert a simple venous congestion into a profound cerebral edema, or incite further hemorrhage Undoubtedly, the use of inhalation anesthesia has been responsible for many of the bad results attending decompressive operations for the relief of acute elevations of intracranial pressure following head trauma

CONCLUSIONS

1 Inhalation anesthesia of any type will greatly increase intracranial pressure, especially if attended by straining and vomiting

2 The elevation of pressure is secondary to a cerebral venous stasis, resulting from an increase of intrathoracic pressure during the irritative stage of anesthesia

3 A sudden elevation of intracranial pressure attending inhalation anesthesia will often induce a marked cerebral edema or exhaust an impaired medullary circulation

4 All intracranial invasions can be safely and satisfactorily carried through under local anesthesia When desired, local anesthesia may be supplemented by oil-ether colonic anesthesia, which does not seriously elevate intracranial pressure

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THE PHYSIOLOGY OF THE MALE REPRODUCTIVE SYSTEM

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While performing a series of experiments involving ligation and resection of the vas deferens, I became interested in the physiology of the storage of spermatozoa and of their progress from the testis to the urethra Experiments were devised to elucidate obscure points that seemed to be interesting Some of these experiments and the conclusions drawn from them are herewith presented

In some species of animals there are cyclic periods of testicular activity This is especially noticeable in those animals that hibernate But in many species, and this is true in man, there is a continuous production of spermatozoa The spermatozoa are present in great numbers in the lumen of the seminiferous tubules The quantity produced per unit of time varies considerably according to physiologic conditions Attention has been called to this fact elsewhere,[1] and it need not be discussed here

Not all maturing germ cells become spermatozoa Some of these cells degenerate before reaching the definitive form Spermatocytes and spermatids in various stages of degeneration may be seen in the lumen of the seminiferous tubules of normal testes There is also a colloidal material present in the seminiferous tubules, the source of which has not been clearly established Part of this colloid is apparently produced by the autolysis of spermatocytes and spermatids Part of it appears to be produced by Sertoli cells[2]

This material (colloidal fluid degenerating germ cells and spermatozoa) moves slowly but steadily through the seminiferous tubules to the collecting tubules Its movement, brushing along the sides of the tubules, causes the spermatic elements to slant much like grass or weeds in a slowly moving stream That there is a constant and considerable movement of this material down the seminiferous tubules is clearly seen in experiments in which the vasa efferentia are ligated Within forty-eight hours the testis becomes considerably distended by the retained seminiferous products The relative inelasticity of the tunica albuginea prevents much enlargement of the testis The hardness of the organ indicates that considerable material has accumulated during the forty-eight hours, causing pressure within the testis The fact that the accumulation begins immediately after ligation of the vasa efferentia shows that this material under normal conditions is constantly leaving the testis[3]

The obvious conclusion is that there is a constant movement of materials from the seminiferous tubules into the collecting tubules and from the testis Apparently there is little room for the storage of this material in the testis

The tubules of the epididymis are about 26 feet long in man Their diameter and volume is not constant, and the variation is considerable The epididymis is supplied by motor nerves Stimulation of these nerves affects the size and volume of the tubules Among the more recent papers affirming this are those of Macht[4] Waddell and King and Oslund[6] This change in volume of the tubules in response to stimulation suggests that this is a mechanism for periodically emptying the epididymis of spermatozoa This contractile mechanism will be considered more in detail later

It is important to note here that there is a continuous flow of material from the epididymis into the vas deferens If the vas deferens is occluded the epididymis becomes distended and hardened The volume of the epididymis increases noticeably within forty-eight hours This increase continues until the tubules reach their maximum of distention If the tubules are punctured at this time, the resulting flow of spermatic fluid clearly indicates that there is considerable pressure within This is to be expected, since there is a continuous flow of material from the testis into the epididymis It soon becomes evident to any one performing such experiments that retention of spermatic fluid in the epididymis is not a normal process There is a constant flow of fluid from the epididymis into the vas deferens, though this flow may be periodically increased The epididymis is not a reservoir for spermatozoa in the sense that it retains the spermatic fluid for periodic emission

The vas deferens in man is a tubule about 20 inches in length It has thick, somewhat inelastic walls Because of the anatomic structure of the vas deferens, it is unlikely that it functions as a reservoir The spermatic fluid normally moves in a constant stream through it from the epididymis The vas deferens however, is supplied by motor nerves which may temporarily increase the rate of emission from it The ampulla has thinner and more elastic walls and its lumen is greater than that of the vas deferens proper Its volume in man, when distended enough to smooth its inner surface, is about 2 cc Like the epididymis and the vas deferens it is capable of contracting It appears to be a small reservoir for the spermatic fluid though there is a constant movement of this material through the ampulla

The duct of the seminal vesicle empties into the vas deferens about 1 5 cm from the terminal orifice of the latter Spermatozoa are often found in the seminal vesicles in cadavers Because of these facts some observers[7] have concluded that the seminal vesicles are reservoirs for spermatozoa This theory has met with the difficulty that the seminal vesicles are poorly developed or present only as vestiges in many species of animals In these species, if storage of spermatozoa takes place, it must be in some other organ

Fisher[8] was unable to find spermatozoa in the seminal vesicles taken from living rats or guinea-pigs or soon after they were killed According to Fisher spermatozoa that are found in the seminal vesicles are migrants which enter the vesicles after the death of the animal I have repeated these observations and have obtained similar results Spermatozoa are not stored in the seminal vesicles

If these observations are correct there is a continuous flow of spermatic fluid from the seminiferous tubules through the epididymis and vas deferens into the urethra I have found sperm in the urethra of dogs, rats and guinea-pigs, and it is by no means uncommon to find spermatozoa in human urine analyzed in the physiologic chemistry laboratory The usual explanation offered for the latter finding is that such urine has been collected following an emission Apparently both explanations should be offered for their presence

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MECHANISM PRODUCING MOVEMENT OF SPERMATIC FLUID

It has already been stated that there is an appreciable flow of spermatic fluid in the seminiferous elements in the tubules The rapid distention of the seminiferous and collecting tubules in the testis following ligation of the vasa efferentia also indicates that there is a continuous movement of spermatic material from the testis What causes the movement of this fluid? Obviously, it is moved along by the production of more material in the same way that any secretion is forced along in its ducts The cellular elements are carried along passively in the fluid from the testis into the epididymis Spermatozoa are inactive while in the testis, and their progress from the testis into the epididymis must be accounted for in the same manner

The tubules of the epididymis are lined with ciliated epithelium The immediate assumption from this is that the column of spermatic fluid with its cellular content is wafted along by the cilia This has been offered as a theory to explain how spermatozoa are transported in the genital tract Benoit[9] has reported that the epididymis secretes a substance which nourishes and activates the sperm He found that spermatozoa are more active in the tubules at the tail of the epididymis than they are at the head end In this way, he adds *another explanation to account for the progress of* spermatozoa from the testis to the urethra The nature of this secretion has not been ascertained Its presence was claimed by Benoit because of the increased motility of the spermatozoa as described, and because he found certain acidophil granules in histologic sections of the epididymis I have been unable to detect the increased motility of spermatozoa found in the tail of the epididymis over those in the head end I have not been able to demonstrate the motility of spermatozoa taken from any part of the epididymis before physiologic sodium chloride solution is added It is not until a drop of 0 9 per cent salt solution has been added to a drop of spermatic fluid, placed on a slide under a compound microscope, that the appearance of motility can be observed I am inclined to view this resulting motility as a product of the sudden change in chemical and ionic relationships Nor would only motility of spermatozoa account for their progress through the tubules of the epididymis They would also have to be endowed with the ability to orient themselves or to respond to some specific chemical attraction if their motility were to be of use in transporting them through the epididymis and vas deferens Their movement in salt solution is chaotic and must be directed if their motility is to account for their progress through the tubules If it is assumed that the spermatozoa are motile, a further difficulty arises in interpreting how the cilia can move them toward the urethra This difficulty arises because it has been found that spermatozoa swim against the movements of the cilia in the vagina

Nor does the postulate of spontaneous activity of spermatozoa account for the movement of the other cellular elements occasionally found in the epididymis or for the movement of the fluid content of these tubules Carbon and other inert substances injected into the collecting tubules of the testis are later found in the proximal portion of the vas deferens Their progress is not to be accounted for by any epididymal secretion causing them to become active The cilia cannot be denied a possible share in this movement, but there is no need of invoking the aid of cilia in the presence of a more powerful factor

The column of seminiferous fluid forces itself along In the same manner that this fluid is forced through the vasa efferentia by the continued production of the material in the testis, it is forced through the tubules of the epididymis The continued production of spermatogenic material exerts considerable pressure before seminiferous activity ceases In experiments involving ligation of the vasa efferentia, the pressure produced in the testis is often great enough to rupture the tough tunica albuginea[3] The continued production of this fluid and of cellular elements forces the column along the tortuous tubules of the epididymis In experiments involving ligation of the vas deferens,[10] a similar pressure is found in the vas deferens and in the epididymis In numerous experiments of this type, I have found large cysts of spermatogenic material near the end of the resected vas deferens when the latter has been ruptured This great pressure cannot be ascribed to ciliary activity Since this pressure exists in the collecting tubules of the testis, its origin is evident There is here, then, the true mechanism causing movement of the spermatic fluid and its cellular elements

It was said before that the epididymis is supplied with motor nerves, and that stimulation of these nerves causes a decrease in its volume This is true not only when the hypogastric nerves are stimulated but also spontaneously[11] Waddell has observed rhythmic movements of the vas deferens These movements result in diminution of tubular volume, and probably aid in moving the column of spermatic fluid through the tubules during copulation A series of these contractions passing from the epididymis to the urethra during copulation moves the spermatic fluid through the tubules These contractions are the mechanism for the transportation of spermatic fluid during copulation

In summary it can be said that the spermatic fluid is propelled through the collecting tubules, the epididymis and the vas deferens by the formation of more secretion The cilia may aid in the movement of spermatic fluid through the epididymis, but their influence is insignificant in comparison with the force exerted by the spermatic material itself Motility of spermatozoa probably does not function in the progress of the fluid content or of the spermatozoa through the tubules Normally there is a constant movement of spermatic fluid through the epididymis and the vas deferens into the urethra As a consequence, spermatozoa are found in the urethra and in the urine There is no considerable storage of spermatozoa in the genital tract The supply of spermatozoa is continuously renewed, and the old material is pushed forward and ejected During copulation there is an increased rate of emission This is caused by contraction of the muscles of the epididymis and vas deferens including the ampulla, which decreases the volume of the tubules and forces the spermatic fluid to the urethra Here the secretion of the seminal vesicles is added

Congress and Honore streets

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[9] Benoit Compt rend Soc de biol **84** 951 1921 **85** 946 1921

[10] Oslund (footnote 1) Am J Physiol **70** 111 (Sept) 1924

[11] Waddell (footnote 5) King C E and Oslund R M Am J Physiol **70** 106 (Sept) 1924

THROMBO-ANGIITIS OBLITERANS (BUERGER)

III PROGNOSTIC VALUE OF THE OSCILLOMETER *

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AND
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A general impression prevails that the prognosis in thrombo-angiitis obliterans is invariably bad, and that amputation of one or more extremities is inevitable This pessimistic attitude is justified if one is guided only by the observations made on the course of the disease in untreated patients In a recent publication on this point[1] it was stated that 77 per cent of 155 untreated patients followed for five years had suffered one or more amputations The outlook under treatment, however, is much better, and the percentage of amputations can be very materially reduced The prognosis in each case depends on the degree of involvement, but it is not possible to determine accurately the degree of involvement by clinical signs alone We have classified our cases according to the extent of impaired circulation present on first examination as revealed by measurements with the Pachon oscillometer Such a classification is accurate and simple It separates the cases that will respond rapidly to treatment from those in which only slow improvement can be expected To illustrate the value of this method for prognosis, we present the outcome in 124 treated cases that have been observed for periods of from three months to four and a half years

The technic of the use of the Pachon oscillometer has already been described at length by one of us[2] Briefly stated, the oscillating needle of the instrument measures, at the level at which the cuff is applied, the expansion of the limb due to pulsation of the vessels Measurements are always made for both lower extremities, and when the unaffected limb is normal the measurement serves as a control by which to judge the degree of impairment in the affected extremity

We have divided our 124 cases into two main classes Group 1, in which the oscillometer reading at the ankle is 0 5 or more, and group 2, in which the reading is 0 or less than 0 5 The prognosis in all of group 1 is good There have not been any amputations in this group, even though gangrene was already present in some cases We shall demonstrate that in group 2 the outlook becomes progressively poorer as the clinical condition is more advanced

These two main groups are further subdivided as follows

1 Cases with positive oscillometer readings at ankle
   A Cases with pain only
   B Cases with pain and ulceration
   C Cases with pain, ulceration and gangrene
2 Cases with zero, or negative, oscillometer readings at ankle
   A Cases with pain only
   B Cases with pain and ulceration
   C Cases with pain, ulceration and gangrene

We present a report of the cases falling in the six subdivisions of these two groups with an illustrative case in each

Group 1 A *Positive reading and pain only* Twenty of our cases fall into this group and all have shown rapid symptomatic improvement under treatment In every case spontaneous pain (pain while at rest) was relieved within a few weeks When coldness of the feet was a symptom, it was replaced by definite subjective warmth Improvement in walking occurred coincidentally with relief of other symptoms, although as a rule favorable progress in this respect is rather slow An illustrative case in this group was the following

H M an Austrian Jew, aged 41, was suffering from pain in the right foot on walking This symptom began one year before and was becoming steadily worse The patient had smoked twenty cigarets a day for the past twenty years Examination showed absence of pulsation in both feet The oscillometer reading at the left ankle was 2 and at the right ankle 1 5 There was no ulceration Under saline treatment and with cessation of smoking rapid improvement took place Within six weeks the right foot became warmer and the nails of both feet began to grow in a more healthy manner Within four months pulsations indicating the establishment of collateral vessels were found in both feet and the patient was able to resume his occupation of butcher after an enforced idleness of about a year Eight months after the patient was first seen he was in excellent condition able to walk five blocks easily and working regularly

Group 1 B *Positive readings pain with ulceration* In this group we have placed cases in which there was pain and one or more ulcerations of the toes or foot Nine of these were observed, of which six were healed and the remaining three are healing In the majority of these cases there was prompt relief of pain The three unhealed ulcers were all of large size

J R a Russian Jew aged 47, a moderate smoker came under observation with a painful ulceration of the right big toe, pain in this toe having begun two months previously The condition was diagnosed as an ingrown toe-nail and the nail was removed Following this operation the pain was greatly aggravated and the patient was unable to sleep An ulcer formed at the site of operation and did not show any tendency to heal Pulsation was not palpable in the right foot but the oscillometer reading at the right ankle was 1 Within three weeks after the treatment was begun, the ulcer was completely healed The pain was considerably lessened, and the right foot was distinctly warmer Three weeks later all pain had disappeared and a pulsation had appeared in the right foot the patient resumed his previous occupation and has not had any recurrence of the pain during the eighteen months that we have observed him

Group 1 C *Positive readings, pain ulceration and gangrene* Three patients with definite gangrene but with oscillometer readings of 0 5 or more were seen Two of these patients were advised by other surgeons that amputation was necessary In all three the condition is completely healed and pain in every case has been entirely relieved

V D, an Austrian Jew aged 50 a heavy smoker, had had for six years typical intermittent claudication in the right leg In December, 1926 owing to pain in the toes, operations were performed, the nails of the first and fifth toes of the right foot being removed Marked exacerbation of pain resulted The patient was unable to sleep and lost a great deal of weight When seen, in April 1927 he had an area of ulceration and gangrene occupying the entire inner surface of the right little toe with exposed tendons In addition a gangrenous ulcer occupied the entire bed of the right big toe-nail The right foot was swollen and showed the typical glossy rubor characteristic of thrombo angiitis obliterans Pulsation could not be felt in this foot The oscillometer reading at the right ankle was 1 5 On this basis a favorable prognosis was made and treatment by our usual method was started. Two months later the pain had noticeably diminished. The ulceration on the little toe was granulating and about three-fourths healed. In September, five months after treatment was begun, the little toe was completely healed and the ulcer on the big toe was reduced to 1 cm. in diameter. By November, both ulcers were completely healed. The pain had entirely disappeared, and the patient returned to his previous occupation.

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* From the Surgical Service Mount Sinai Hospital New York

[1] Silbert Samuel Studies on Thrombo Angiitis Obliterans (Buerger) II The Effectiveness of Therapeutic Procedures J A M A 89 964 (Sept 17) 1927

[2] Samuels S S The Value of Oscillometry in the Study of the Circulatory Disturbances of the Extremities J A M A 88 1780 (June 4) 1927

Summarizing group 1, in which the oscillometer revealed evidence of considerable circulation, there were thirty-two patients, all of whom have made favorable progress. Amputation was not necessary in any case in this group. In group 2, however, in which the oscillometer reading was zero, the outlook is not so satisfactory.

Group 2 A. *Negative readings and pain only.* There were sixty-three cases in this group. Pain while at rest has been relieved in fifty-one cases, but more slowly than in group 1 A. Those who are still unrelieved have been treated less than six months. Intermittent claudication usually continues to some degree, but gradual improvement in walking is the rule. One patient in this group failed to respond to treatment, became progressively worse, and required amputation. The following case is a typical example of group 2:

H. F., a Polish Jew, aged 30, had been disabled for six months by pain on walking. For three weeks he had had constant severe pain in the left foot. He had smoked about twenty cigarets a day for sixteen years. On examination, pulsation could not be felt in the left foot, and there was no ulceration. The foot was swollen and glossy red and showed the characteristic signs of thrombo-angiitis obliterans. The oscillometer reading at the ankle was zero. Under treatment gradual improvement took place. In about two months the pain while at rest was nearly gone, the foot was warmer and the patient had gained weight. Within six months he was able to resume part-time employment at his previous occupation. There was decided improvement in walking. Recent examination shows that the left foot is warm and that the nails are growing well, but there is still no pulsation.

Group 2 B. *Negative reading, pain with ulceration.* In this group the danger line begins to be approached. Ulcerations in these extremities, in which the circulation is obviously inadequate to maintain the nutrition of the tissues, may progress to gangrene and amputation. Twenty-two of our cases fall into this group. In thirteen of them the ulcers healed under treatment. Three cases progressed to gangrene and amputation.

H. S., aged 42, an Austrian Jew, had been observed for ten months. He had always been a heavy smoker and his symptoms dated back twenty years. During this time, he had had pain and repeated ulcerations of the left foot. Two years before we saw him, gangrene of the left foot developed and amputation of the extremity was performed at Bellevue Hospital. One month before, an ulcer developed on the right big toe and after this intense pain prevented the patient from sleeping. No pulsation could be felt in the foot, and the oscillometer gave a reading of zero at the right ankle. Although the ulcer was small, continued treatment for nine months was necessary before it was completely healed. The pain gradually disappeared, and the patient is now back at work and self-supporting. Up to the present time, no pulsation has been felt in his foot.

Group 2 C. *Negative readings, pain, ulceration and gangrene.* It is in this group that the outlook is almost invariably bad. Five of the seven cases have come to amputation. In only two have we been able to save the extremity. The following case is typical of this group:

W. K., an Austrian Gentile, aged 41, whom we have observed for about fourteen months, gave the usual history of heavy smoking and stated that he had had intermittent claudication and pain in the right foot for four months. At the first examination, gangrene of the fifth toe of the right foot was present. There was no pulsation in the right foot, and the oscillometer reading at the right ankle was zero. In spite of treatment, gangrene progressed and the pain became unbearable. Amputation through the upper third of the right leg was performed six weeks after the patient was first seen.

Summarizing group 2, there were ninety-two patients with zero oscillometer readings at the ankle. All the nine amputations occurred in this group. These results are in striking contrast to the excellent outlook in group 1.

In order to check up the improvement in circulation, examinations with the oscillometer have been done at intervals of from two to three months. In many cases we have noted a steady improvement in the oscillometer readings coincident with subjective evidences of improvement. However, we found that the symptomatic improvement under treatment with intravenous injections of hypertonic saline solution is greater than one would suspect from the changes that can be found with the oscillometer. Numerous patients who had a zero reading at the ankle at the time of the first examination continued to have a zero reading in spite of striking symptomatic improvement. Improvement in oscillometric readings is, however, valuable corroborative evidence of improved circulation.

Results of Treatment in Thrombo-Angiitis Obliterans

Condition	Number of Cases	Symptomatic Improvement	Oscillometric Improvement	Ulcers Healed	Amputations
Group 1					
A. Pain only	20	20	9		0
B. Pain with ulceration	9	9	3	6	0
C. Pain, ulceration and gangrene	3	3	2	3	0
Group 2					
A. Pain only	63	51	14		1
B. Pain with ulceration	22	17	3	13	3
C. Pain, ulceration and gangrene	7	1	0	0	5
Totals	124	101	31	22	9

SUMMARY AND CONCLUSIONS

1. The course of thrombo-angiitis obliterans has been followed in 124 cases for periods varying from three months to four and one-half years. These cases were studied with the oscillometer in an effort to determine the prognosis.

2. Examination with the oscillometer frequently reveals pulsation when none can be felt on palpation.

3. When oscillometric examination shows pulsation at the ankle, the prognosis for the relief of symptoms is good, even if ulceration or actual gangrene is present.

4. If examination with the oscillometer gives a zero reading, the prognosis for saving the extremity becomes worse as the process is more advanced. In this group, if gangrene is already present, the outlook is poor.

55 East Eighty-Sixth Street—164 West Seventy-Ninth Street.

Science of Medicine.—The methods and accumulated results of all sciences must be used in pursuing the science of medicine. That some of these sciences are more closely related to medicine in their methods and fields of endeavor than are others is obvious. Biology, comparative anatomy, embryology, bacteriology, protozoology, certain branches of botany, anthropology, human anatomy, human physiology, psychology, and even certain aspects of the social sciences, have many close affiliations with medicine.—Cole, Rufus: *Science* **67**: 50 (Jan. 20) 1928.

OBSTRUCTION OF THE CYSTIC DUCT OF A CATARRHAL VARIETY

SHOULD A POSITIVE CHOLECYSTOGRAM BE ALWAYS CONSTRUED TO MEAN A PATHOLOGIC CONDITION OF THE GALLBLADDER OF SURGICAL DEGREE?[*]

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AND
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The last decade, remarkable for its many notable discoveries of importance has been featured by the advancement in our knowledge of the physiology of the biliary tract and by the introduction of new methods of diagnosing and treating its states of disease

As an outcome of Abel and Rowntree's [1] studies with the phthaleins, the discovery and development of cholecystography by Graham and Cole [2] marked a most important forward step By means of it, we have been better able to study the gallbladder itself in health and disease, to estimate its function in several directions, and to increase our ability to separate the surgical from the so-called medical gallbladder

During the three years since the discovery was announced that certain halogenated dyes when given intravenously permitted direct visualization of the gallbladder by the roentgen ray, cholecystography has been steadily perfected and made safer by its originators and has been internationally adopted by roentgenologists, surgeons and internists, who have published the results of thousands of observations

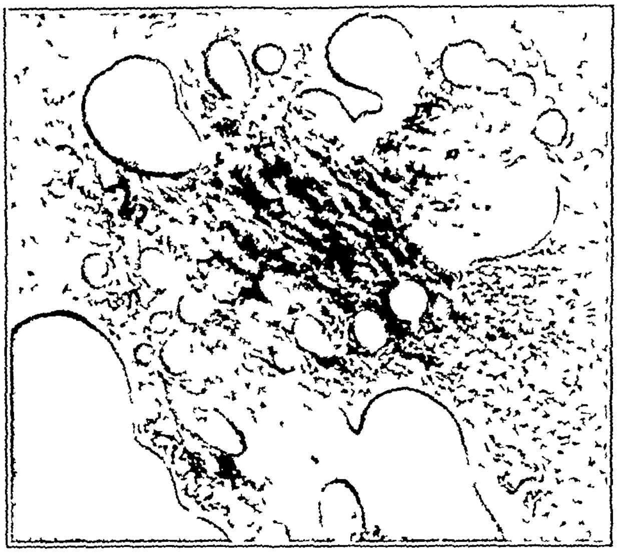

Fig 1—Microscopic picture believed to be pathognomonic of cystic duct obstruction when due to catarrh, characteristic features are noted in text

By means of cholecystography, it has been possible to substantiate again the work of Rous and McMaster [3] on the concentrating function of the gallbladder, to throw further doubt on the intriguing hypothesis of Sweet [4] and of Halpert [5] that bile and its contents entering the gallbladder by way of the cystic duct never thereafter leaves the gallbladder as such but is absorbed in some manner within the gallbladder, to help those experimentally inclined to study the effect of various food products in stimulating the gallbladder to eject its contents (Boyden,[6] Whitaker [7]), and to prove our contention that gallbladder bile can be discharged by the intraduodenal use of magnesium sulphate,[8] of olive oil (representing a concentrated fat), and of peptone (representing one product of protein digestion), and also by the use of oleic acid and other substances

All these various substances—indeed, even lipogenous foods—when given intraduodenally (and also intragastrically) vary considerably in their stimulative effect in securing gallbladder drainage, and in certain patients give quite inconsistent response For instance, where today in one patient 15 cc of melted butter or 30 cc of cream or egg yolk will produce excellent gallbladder drainage response, tomorrow they may be less effective than magnesium sulphate, and vice versa Whitaker comments on the fact that the motor power of the gallbladder is distinctly diminished in a sick cat or dog In regard to the effects of magnesium sulphate stimulation, certain studies (Silverman and Menville,[9] Whitaker [7] and others) have shown that there is increased emptying of the gallbladder when the magnesium sulphate solution is introduced directly into the duodenum as compared with its emptying when this salt is taken by mouth or introduced directly into the stomach

Cholecystography has quickly established itself as the most logical method of diagnosis of the sick gallbladder It is a method that appeals to us because of its simplicity ease of demonstration and high degree of accuracy Judged by papers of report, its accuracy in diagnosis ranges between 90 and 100 per cent We believe that subsequent events will show that these figures are too high, and that cholecystography, like any other single method of diagnosis, has its limitations as well as certain possibilities of error, one of which we discuss here

We have felt that such a method could be relied on to detect late pathologic changes in the gallbladder but we are doubtful of its ability to recognize cholecystitis in its infancy This brings up the crux of the issue, namely, What is meant by grade 1 cholecystitis and where does it begin? If it begins in the gallbladder wall, cholecystography will perhaps be able to detect the earliest recognizable stage, if it begins in the mucosa, cholecystography is obviously of less help as a means of early diagnosis when compared to a properly done duodenal drainage study of the bile tract Intelligent biliary drainage will detect the dysfunction of the gallbladder in concentrating or emptying as accurately as the cholecystogram In this respect, they check nicely. In fact, it can go further, as we hope to show

If a positive cholecystogram is always indicative of a pathologic condition of the gallbladder demanding surgery, how is it that such a positive diagnostic test can be converted into a normal, or negative, one in certain cases? If this be done, is it because of an error in the diagnostic interpretation of the cholecystogram or a result of improvement in function brought about by duodenal drainage?

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[*] Read before the American Gastro Enterological Association Atlantic City May 3, 1927

[*] Owing to lack of space this article is abbreviated in The Journal by the omission of some of the illustrations The complete article appears in the reprints a copy of which may be obtained on application to the authors

[1] Abel J J and Rowntree L G J Pharmacol & Exper Therap **1** 231 1909

[2] Graham E A and Cole W H Roentgenologic Examination of Gallbladder J A M A **82** 613 (Feb 23) 1924

[3] Rous Peyton and McMaster, P D J Exper Med **34** 47 (July) 1921

[4] Sweet J E Internat Clin **1** 187 (March) 1924

[5] Halpert B Med Klin **20** 408 (March 30) 1924

[6] Boyden E A *Anat Rec* **30** *333 1925*

[7] Whitaker L R Experiences with Cholecystography Including Observations on Functions of Gallbladder J A M A **86** 239 (Jan 23) 1926 Am J Physiol **78** 411 (Oct) 1926

[8] Lake M Am J M Sc **174** 786 (Dec) *1927*

[9] Silverman D N and Menville L J Observations of Visualized Gallbladder by Graham Method, J A M A **84** 416 (Feb 7) 1925, Surg Gynec *Obst* **41** *284 (Sept) 1925*

Before going further, it would now seem appropriate to state briefly the generally accepted diagnostic interpretation of a negative and a positive cholecystogram as judged from a review of the literature In a patient with a normal liver, normal gallbladder and unobstructed ducts, the dye introduced either intravenously or by mouth reaches the liver, passes out in the bile, enters the gallbladder by way of the cystic duct, is visualized by the roentgen ray, increases its density of shadow and is gradually discharged from the gallbladder, all within reasonably established normal time limits unless the gallbladder emptying is accelerated as a result of food products reaching the duodenum, particularly those rich in fats, such as cream, butter and egg yolk It has been found, too, that variations in the size, shape and position of the gallbladder, as well as its rate of emptying, bear a definite relation to the general habitus of the patient The essentials, then, of a negative cholecystogram suggesting normal health of the gallbladder consist of its proper filling, its proper concentration, and its proper rate of emptying of the dye, especially when responding to the influence of the Boyden meal, with evidence of normal contractility and absence of deformity of the gallbladder wall

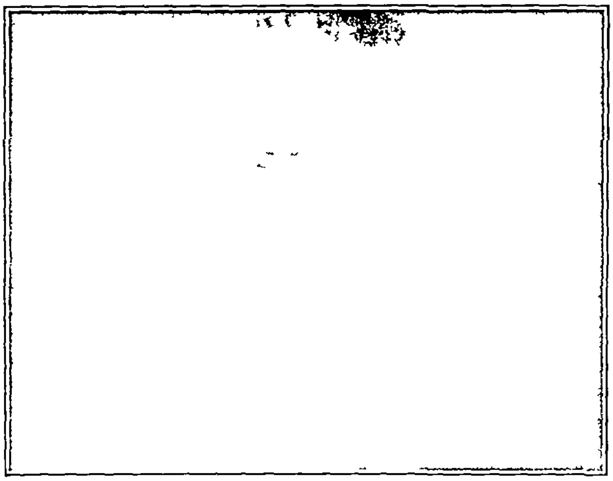
Fig 2 (case 2) — Positive" cholecystogram, Nov 8, 1926, oral seventeen hours in M E a man

The positive cholecystogram interpreted to indicate disease of the gallbladder consists in (1) failure of visualization of the gallbladder suggesting either (*a*) an obstruction of the cystic dust or (*b*) a gallbladder content made up of a solitary calculus or thickened gallbladder mud (d'une veritable boue, of the French writers), so static as not to receive a fresh admixture of dye-stained bile, (2) a partial visualization of the gallbladder with mottled areas suggesting calculi or positive or negative shadows of gallstones, in which instance it may be inferred that the cystic duct is not completely occluded, (3) an imperfect visualization of the gallbladder with failure of the dye to concentrate, suggesting disease of the gallbladder sufficient to impair this function, (4) delayed filling, concentrating or emptying of the gallbladder, or a deformed silhouette suggesting adhesions A positive cholecystogram, therefore, is inferentially accepted as an indication of gallbladder disease requiring surgical intervention Here lies a possibility of three errors in diagnosis of considerable importance to the patient The first, and by far the less common one, is disease of the liver preventing excretion of the dye in sufficient concentration The second possibility, of more frequent occurrence, may be a dysfunction of the duodenum or of the termination of the common duct producing abnormal relaxation of either of them, whereby the dye-laden bile passes out directly into the duodenum and so prevents visualization of the gallbladder Furthermore, if the oral method is used, disturbed absorptive power of the intestine may in some instances contribute to poor visualization, or, if diarrhea occurs, intestinal hypermotility, interfering with proper absorption, may be a factor These possibilities we will leave for future consideration The third and quite common possibility of error concerns obstruction of the cystic duct by catarrh or inflammatory edema, an obstruction which may be either partial or complete To this we shall return presently Obviously, any of these conditions may prevent visualization of the gallbladder and account for cases in which a normal gallbladder is found at operation It is quite true that the intravenous administration of the dye in such cases tends to minimize the frequency of this error of interpretation, nevertheless, it can occur despite this method of use

Contrary to the view regarding the pathogenesis of cholecystitis, advanced particularly by Graham [10] to the effect that disease of the gallbladder usually begins in the serosa and walls as a result of infection carried from the liver by the network of lymphatics, we believe that the initial portal of entry is quite as often by way of the mucosa rather than the serosa, with infection carried by the bile stream or ascending by way of the common duct In a recent paper particularly developing this point of view, one of us pointed out the desirability of investigating the portal of entry in cholecystitis by a study of the microscopic evidence of abnormal cellular exfoliation, inflammatory products, and infection, in other words, a study of the living tissue (and bacteria) obtained by duodenal biliary aspirates

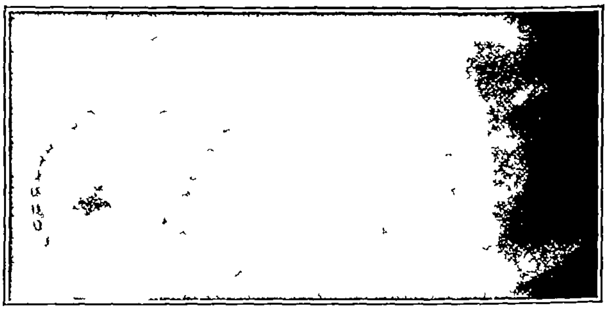
Fig 4 (case 2) —Cholecystogram, Jan 3 1927 intravenous, six hours. Note improvement after eight duodenal bile drainages.

We find that such abnormal tissue is demonstrable, group 1, in many patients who are entirely free of clinical symptoms or physical or roentgen-ray signs of gallbladder involvement at the time of their original examination but who later on, if untreated, develop definite gallbladder disease, group 2, in patients who on their first examination presented themselves with somewhat nondescript complaints, sometimes suggesting so called biliousness or nervous indigestion, with belching, flatulence, often slight nausea, but no confirmatory physical signs of cholecystitis and negative roentgen-ray observations by usual methods until the introduction of cholecystography demonstrated that many of them responded to the dye test with a positive cholecystogram, group 3, *in patients with histories* and physical signs and positive cholecystograms quite suggestive of definite cholecystitis, with or without stones, and group 4, in patients who on history and physical examination alone, or such examination supplemented by roentgen-ray study, gave an unmistakable clinical picture of acute cholecystitis, usually without stones, or chronic calculous cholecystitis, upper right quadrant adhesions and evidence of associated intra-abdominal lesions These four groups somewhat parallel the clinical classifications of cholecystitis laid down by Cheney[11] and others, and in our opinion *represent the transitions from grade 1 to grade 4 disease* As a result of our microscopic observations in all four groups, we believe that such histologic abnormalities frequently exist in many so-called normal persons, representing the breeding period of grade 1 or grade 2 cholecystitis, and therefore such conditions antedate by many years the development of living pathologic structures

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[10] Graham E A Surg Gynec Obst **26** 521 (May) 1918 Graham E A and Peterman M G Further Observations on Lymphatic Origin of Cholecystitis Choledochitis and Associated Pancreatitis Arch Surg 4 23 (Jan) 1922

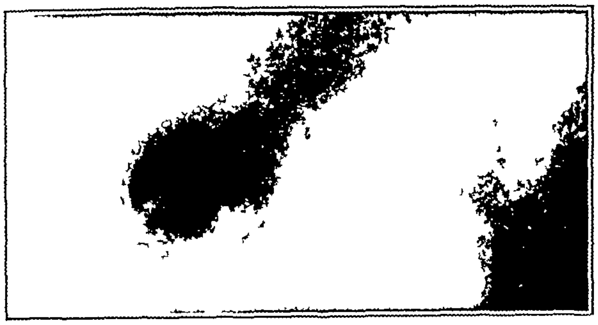

Fig 5 (case 2) —Cholecystogram Jan 18 1927 intravenous six hours Note further improvement after ten drainages

In a previous article, we[12] directed attention to a possible sequence of events which took place in the establishment of cholecystitis when due to infection, expressing our belief that, as in many other diseases of the gastro-intestinal tract, the mucosa rather than the serosa is primarily injured, in that paper, we made substantially the following statement

In the early beginnings of cholecystitis and choledochitis, the reaction to low grade inflammation or to subinfection is at first a catarrhal process involving the mucous membranes, with an outpouring of mucus, abnormal denudation of the gall tract or duodenal (or pyloric) epithelium, and abnormal numbers of bile-stained lymphocytes or polymorphonuclear leukocytes, depending on the degree and acuteness of the inflammation In many instances, the process in this early stage is purely catarrhal, but may involve any portion of the gall tract from the liver cells down to the termination of the common duct If the latter predominates, obstruction of the choledochus takes place and catarrhal jaundice ensues This is well known

But we particularly wish to point out that, in our opinion, this early catarrhal process in many cases may be localized chiefly in the cystic duct and so produce abnormal retention of gallbladder bile with resultant injury to the gallbladder mucosa and walls This condition *is recognizable by only two diagnostic procedures* biliary tract drainage study or Graham's cholecystogram method The latter method, however, cannot differentiate between cystic duct obstruction due to catarrh and that produced by adhesions, stone impaction or stricture, whereas cystic duct obstruction when due to catarrh gives an abnormal drainage sequence and a characteristic microscopic picture Such obstruction may be partial or complete Either no B (gallbladder) fraction is recovered, or it is recovered only in small amounts, and is then accompanied or preceded by the discharge of characteristic flocculi of yellow brown mucus, in shaggy, slimy masses Microscopically, this mucus will be found unusually dense, often twisted or spiraled (as we think by the rifling of the cystic duct) and encrusted with bile salts, but the important finding is an oleaginous material, ranging from pale to bright yellow, which melts out into globules, pools and lakes By chemical tests, this lipoid appears to be a fatty ester of cholesterol (fig 1) When infection has taken place and inflammation progressed beyond the catarrhal stage, there will be found, in addition, bile-stained colonies of culturally viable bacteria, collections of pus cells and often increased exfoliation of bile-stained columnar epithelium

We believe that this microscopic picture is pathognomonic of cystic duct obstruction when due to catarrh, and in many cases appears to be one of the earliest signs of grade 1 cholecystitis, as well as a condition which often accompanies the later grades of pathologic change The pathogenesis of this condition is at present unknown, although recent studies of Kodama[13] on the lymphatics of the extrahepatic biliary passages, and of Mentzer[14] on cholesterosis of the gallbladder appear to bear somewhat on the subject We have gained the impression that there must be several factors concerned in the formation of this oleaginous material We have noted that in very early stages the droplets are small and translucent gray, appearing like neutral fat globules, whereas in the well developed picture the brilliant chrome yellow is the most striking feature Apparently this taking on of color is a gradual transition, brought about by as yet unknown factors, because we see the smaller translucent droplets becoming faintly *yellow tinted and gradually more yellow as they coalesce* Some degenerative process in the mucus strands containing epithelioid cells seems to play an important part, for it is frequently observed that the *oleaginous material* melts out from within the depths of the mucus and spills over in pools along the edges Warmth seems to hasten the process It has impressed us that there may

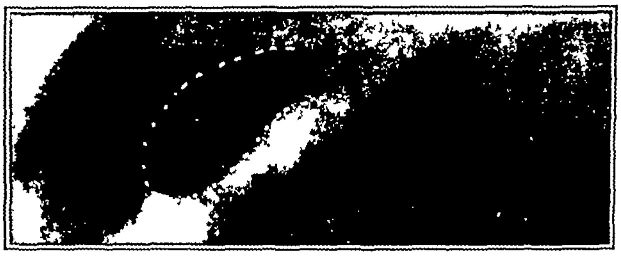

Fig 7 (case 2) —Cholecystogram Jan 18 1927 intravenous, nine hours Note further improvement after ten drainages be some chemical difference in the cells lining the cystic duct by which they elaborate a different type of mucous floccules than those furnished from the other extrahepatic ducts

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[11] Cheney W F Am J M Sc **160** 469 (Oct) 1920 Diagnosis of Gallbladder Disease J A M A **78** 1281 (April 29) 1922

[12] Lyon B B V Memphis M J **3** 67 1926 Presse med **87** 1361 1926

[13] Kodama Shuichi Surg Gynec Obst **43** 140 (Aug) 1926

[14] Mentzer, S H Am J Path **1** 383 (July) 1925

Several years ago (1919-1920), when, in the course of a biliary tract study, the senior author encountered a patient (of group 1 or 2 as previously described) in whom no B bile was recoverable after one or two drainage attempts (and in whom this microscopic picture was observed but not then understood), he concluded that such a case was beyond the scope of nonsurgical therapy and referred a number of these patients to the surgeon It was disconcerting to observe, however, that the surgeon could not demonstrate any visible evidence of disease in the gallbladder and therefore refused to drain or remove it, doing an appendectomy if the appendix had not already been removed It was observed that several such patients after a lapse of one or more years developed more conspicuous gallbladder symptoms, which again brought them to the operating table, at which time gross pathologic changes in the gallbladder or its contents were easily demonstrable This suggested to us that such a catarrhal process might represent one of the earliest stages in the life cycle of cholecystitis, and might be cured if energetically treated by duodenal drainage Shortly thereafter (1921-1923) in similar cases of catarrhal cystic duct obstruction in which operation was refused, we agreed to undertake a program of nonsurgical management We found that after a series of drainages the slimy flocculi giving this oleaginous microscopic appearance lessened, and on the second to sixth or further drainage we recovered an excellent specimen of B bile suggesting that we had unblocked the cystic duct to a point sufficient to permit the gallbladder to empty in response to duodenal stimulation of magnesium sulphate, peptone or olive oil Simultaneously with this recovery of B bile, there usually occurred a noticeable improvement in several of the presenting complaints (upper right abdominal soreness and pressure distress, belching, nausea, pyrosis and flatulence) It was also noted that when this cystic duct obstruction had been overcome, some patients could return to a fat-full diet to which previously they had been intolerant We observed, however, that the objective manifestations of microscopic abnormalities often persisted long after symptoms disappeared, and that unless drainages were given at frequent intervals, from once to thrice weekly, relapses in symptoms—paralleling increased microscopic abnormalities—would occur As a result of this observation, a schedule of more continuous drainage was worked out about 1923, and reported [15] first in 1925 together with the greatly improved results which it gave us Even during this period, it was noted in several cases that a roentgen-ray shadow of the gallbladder by the older methods, then taken to indicate disease of the gallbladder wall, could be made to disappear after a course of therapeutic medical drainage

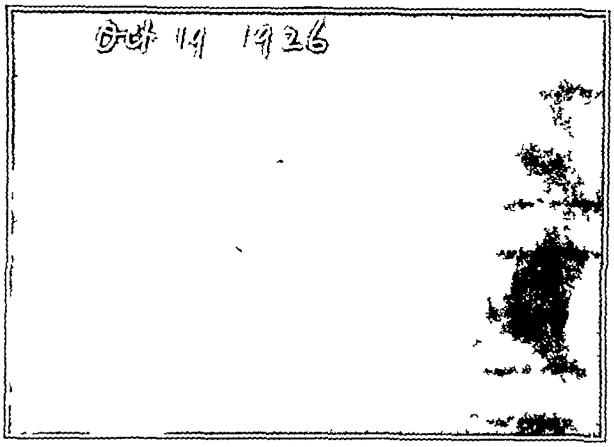

Fig 9 (case 3) — Positive cholecystogram Oct 19 1926, oral seventeen hours

Shortly after Graham announced his method of cholecystography in 1924, we realized that this would be a most useful method of proving our suspicion that cystic duct obstruction due to catarrh, with its characteristic microscopic appearance, might give a positive cholecystogram suggesting a pathologic gallbladder of a surgical degree and that, if we could free the cystic duct of its obstructing catarrh by duodenal drainage, we should be able to demonstrate the conversion of this positive cholecystogram into a negative, or so-called normal one, provided only a grade 1 cholecystitis associated with cystic duct catarrh existed

Our reasoning was as follows In the patient in whom no B bile was recovered after one or more diagnostic drainages, we felt that we had secured evidence of (*a*) cystic duct obstruction, (*b*) possible atony of the gallbladder, (*c*) some disturbance in the neuromuscular balance between the gallbladder and the sphincter of Oddi, or some pathologic stiffening or increased tonicity of the duodenal wall, and (*d*), a gallbladder choked with stones or static bile (gallbladder mud) Attention was then directed to differentiating these possibilities by a critical review of such factors as the history, physical and roentgen-ray observations, and chemical and serologic reactions of the blood In some cases we became convinced that the chief reason for failure to recover a B bile from the gallbladder was that the cystic duct was obstructed, and in this event a cholecystogram should be positive

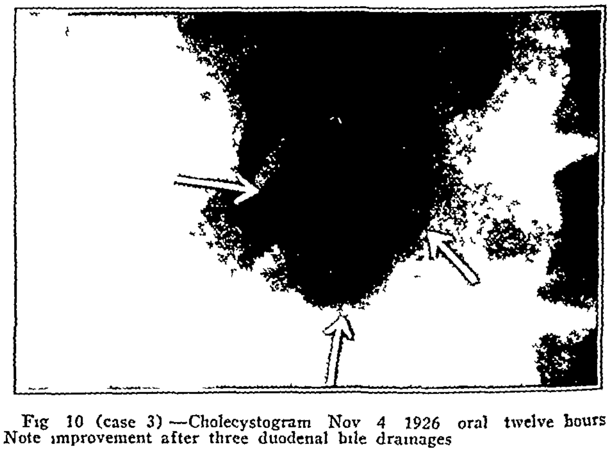

Fig 10 (case 3) —Cholecystogram Nov 4 1926 oral twelve hours Note improvement after three duodenal bile drainages

The known causes of cystic duct obstruction have been described as stone block, adhesions stricture or angulation of the duct, or pressure on the duct from without (gland, tumor, etc) To this list, we believe catarrh or inflammatory edema of the cystic duct should be added A spasm of the cystic duct has been advanced as a further possibility, which, however, is difficult or impossible of verification Of these various factors, we felt that if impacted stone was the cause, our attempt at drainage should be accompanied by, or followed by, an attack of pain like that of gallstone colic In certain cases this transpired, and we sometimes recovered the stone in the sieved stool, or minute fragments of it in our drainage bottles It was conceivable, although insusceptible of proof that by repeated drainages we might reduce the size of a swollen lymph node sufficiently to release its pressure on the cystic duct We felt that obstruction due to stricture or old adhesions involving the duct would probably not be influenced by drainages repeated ad libitum But none of the foregoing causes of obstruction of the cystic duct need be confused with that due to catarrh if the microscopic picture described may be accepted as pathognomonic

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[15] Lyon, B B V and Swalm W A Therapeutic Value of Nonsurgical Drainage of Biliary Tract J A M A 85 1541 (Nov 14) 1925

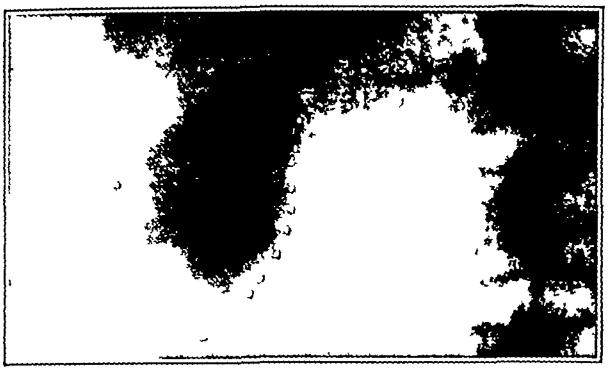

Fig 13 (case 3) —Cholecystogram Dec 16, 1926 intravenous seven hours Note improvement in filling and concentrating but delayed emptying after eight drainages

In our attempt to prove its existence as a heretofore undescribed entity, we turned for help to the cholecystographic method We assumed that (*a*) if the cystic duct was completely obstructed, no dye could enter the gallbladder, (*b*) if partially obstructed, only faint shadows of the gallbladder should be secured which might be inferred to mean either insufficient filling or poor concentrating function of the gallbladder or (*c*) a mottled appearance might be due to calculi with an admixture of dye stained bile We found that not infrequently the last two conditions may exist at the same time as cystic duct catarrh We next assumed that if such a positive cholecystogram was obtained in a case of catarrhal cystic duct obstruction, we must prove that we could change it into a negative cystogram at any period after we had succeeded in getting a good B fraction after a series of drainages

This we have succeeded in doing in several cases, as attested by the accompanying comparative cholecystograms From the standpoint of such factors as the history and the physical conditions, all the patients so far studied belonged in group 2 We are conscious of the fact that there is one point in this paper which can readily be criticized, namely, that the patients studied have been given tetraiodophenolphthalein by both the oral and the intravenous route The results might be made more convincing if only one method of administration had been used on each patient This we intend to do in subsequent cases

There is also a possibility that the lipoid material microscopically demonstrable in drainage aspirates may be derived in some cases from the cholesterol deposits in the mucosa of the so-called strawberry gallbladder, and that in this event the failure to visualize the gallbladder by cholecystogram and failure to recover a recognizable B fraction may be due to a loss of concentrating ability of the injured mucosa Under such circumstances the return of a normal cholecystogram and a recognizable B bile would seem to indicate that duodenal drainage is able to improve or arrest this type of gallbladder disease if treatment is instituted in time However, we believe that this supposition, although it cannot be entirely discarded, is obviously not the only explanation of the source of this oleaginous material because we have found the same characteristic microscopic appearance in several cases in which a cholecystectomy had already been done This again brought up the question as to whether other portions of the duct system could furnish this oleaginous material We still believe, however, that it is more commonly endogenous to the cystic duct and that its demonstration in such cholecystectomized individuals might mean that the cystic duct had been ligated near the neck of the gallbladder rather than nearer the junction of the common duct, thus leaving behind a sufficient portion of the cystic duct to permit the budding outgrowth or aneurysmal-like pouching of the proximal end of the cystic duct, as demonstrated by Sweet We have also recently approached this phase of the question by scraping the mucosa of forty-three gallbladders (obtained by operation or autopsy) representing various grades of cholecystitis and have thus far failed to observe the well developed picture of the chrome yellow lipoid, although occasionally translucent gray droplets have been seen

SUMMARY

As a result of this study, we believe that

1 Catarrhal obstruction of the cystic duct is of common occurrence It may be partial or complete It occurs frequently in grade 1 cholecystitis, but may also be present in later grades of disease

2 It does not give a characteristic symptomatology

3 Its presence is indicated by a characteristic microscopic picture of biliary drainage aspirates

4 This form of cystic duct obstruction can be differentially diagnosed only by biliary drainage study

5 When the catarrhal obstruction is complete the Graham cholecystogram will be positive, thus suggesting cholecystitis of a surgical degree But by means of repeated biliary drainages, it has been possible to change such a positive into a negative, or normal, cholecystogram

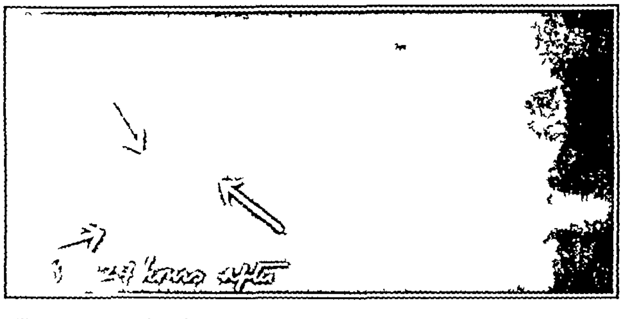

Fig 14 (case 3) —Cholecystogram Dec 16 1926, intravenous twenty four hours Note improvement in filling and concentrating but delayed emptying after eight drainages

6 This condition may account for some cases in which operation was performed on the basis of a positive cholecystogram but in which the surgeon was unable to demonstrate disease of the gallbladder

7 Patients with catarrhal cystic duct obstruction, unassociated with other pathologic change, do not require surgery but will regain normal gallbladder function by means of nonsurgical biliary tract drainage

8 It is therefore obviously desirable that the patient in whom disease of the galltract is suspected should be studied by both biliary drainage and the cholecystogram, if the welfare of the patient is given first consideration

9 When the obstruction has been overcome by duodenal drainage, the patient may return to the fat-full diet to which he had previously been intolerant[16]

328 South Twenty-First Street

FRACTURES OF THE CLAVICLE

A SIMPLE FIXATION DRESSING, WITH A SUMMARY OF THE TREATMENT AND RESULTS ATTAINED IN NINETY-TWO CASES *

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The material used in this simple dressing for fractures of the clavicle consists of four pieces of adhesive (4 inches wide by 48 inches long), one pad of cotton, and a small circular pad of felt (3 inches in diameter) For children, these dimensions vary according to the size of the child

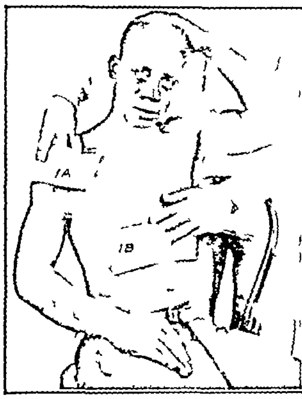

Fig 1 —Applicating of adhesive strip 1 This pulls the shoulder back aiding approximation of overlapped fragments The hand of the uninvolved side should remain on top of the head throughout the whole period of applying the dressing

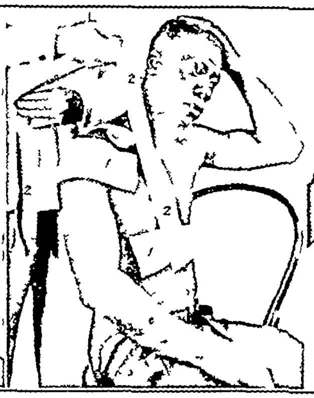

Fig 2 —Felt pad and adhesive strip 2 being applied This procedure prevents an exaggerated upward misplacement of the proximal fragment

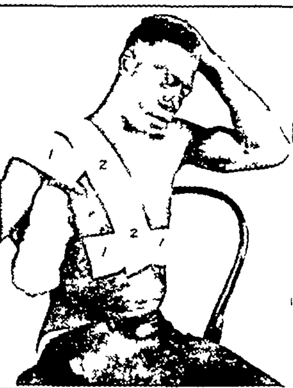

Fig 3 —The cotton prevents coaptation of skin surfaces and acts as a fulcrum to the arm and strip 4 in relieving any overlapping of fragments

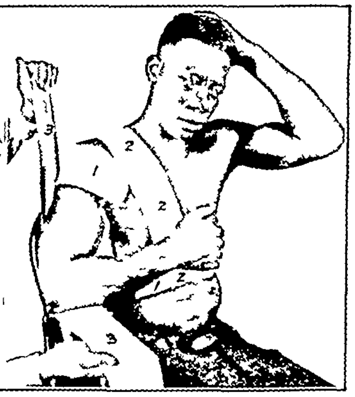

Fig 4 —Adhesive strip 3 being applied This raises the arm and shoulder, thereby aiding further approximation of the downward misplaced distal fragment Cotton should always be applied underneath the elbow

Application of the dressing is made as follows After the chest has been shaved and cleansed with ether, the patient is placed in a sitting position with the hand of the uninvolved side on top of the head, or being supported by an assistant if an anesthetic has been given The arm of the injured side should be, and usually is, against the side of the chest with the forearm resting in the patient's lap Adhesive strip 1 is then applied This strip (fig 1, 1 *A*) commences in front, just at the point of fracture of the distal fragment With the aid of an assistant and with the patient's cooperation, the shoulders are pulled backward, tension being made on adhesive strip 1, which is carried out and around the upper part of the arm on the injured side, then in and diagonally across the back to the opposite axilla, extending underneath the latter, then around in front, crossing both sides of the chest and terminating about 2 inches below the nipple line on the injured side (fig 1, 1 *B*) This strip pulls the injured shoulder backward, thereby tending to approximate the fragments by correcting any overlapping

The felt pad is applied directly over the fracture, the pad being held in place with a small piece of adhesive tape (fig 2)

Adhesive strip 2 (fig 2) commences in the median line of the abdomen, a few inches above the umbilicus, and extends diagonally up the chest on the injured side, over the felt pad With the application of considerable tension on the adhesive, it is then extended diagonally down the back to the median line, terminating usually at the lumbosacral region This strip should be applied only after the patient has taken a deep expiration Adhesive strip 2 aids in preventing any tendency of an upward misplacement of the fragments, this misplacement usually being more marked in the proximal fragment as a result of the action of the sternocleidomastoid muscle

A large cotton pad is now applied in the axilla (fig 3) which aids in pulling the distal fragment outward and at the same time separating the skin surfaces of the arm and chest The forearm is flexed nearly to an acute angle at the elbow and placed against the chest While the opposite ends of strip 3 are held widely apart, it is first applied (fig 4) to the inferior surface of the elbow, after a small piece of cotton has been applied to the latter With considerable tension, the front and back halves of the adhesive strip are brought up the corresponding surfaces of the arm, meeting and overlapping over the shoulder near the middle third of the clavicle (fig 5) This strip pulls the shoulder upward, thereby aiding further approximation of the distal fragment, which is usually displaced downward

Strip 4 commences on the back, at the midaxillary line of the opposite side in the region of the ninth and tenth ribs (fig 6) It extends horizontally across the back to the involved side around the arm about 4 inches above the olecranon process, then across the forearm and base of the wrist, ending where it commenced, that is, in the midaxillary line of the opposite side Cotton should be placed between the skin surfaces of the forearm and chest, and also between the adhesive strip and the forearm When moderate tension is applied to strip 4, the distal fragment is pulled outward, the cotton pad in the axilla acting as a fulcrum This piece also aids in stabilizing the arm and forearm, making a support for the latter

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[16] The question of the rationale of a fat full diet in gallbladder and galltract disease will be considered in a subsequent paper

* From the Orthopedic Clinic Employees Hospital Tennessee Coal Iron and Railroad Company

None of the dressing has to be removed for reinforcement except strip 4 All the reinforcements are done by applying similar pieces of adhesive plaster over the original ones The dressing is very comfortable, cool and efficient

This series of ninety-two cases of fracture of the clavicle which is being presented occurred over a period of four and one-half years, all were treated at the orthopedic clinic of the Employees' Hospital Ninety-one were simple fractures and one was compound Seventy-nine were transverse fractures, three were comminuted seven were oblique, and three were greenstick Forty-five were on the right and forty-seven were on the left side Twenty-three were in the outer third, sixty-four were in the middle third, and five were in the inner third of the clavicle Nineteen cases were complicated by injury to the shoulder joint, and four were complicated by injury to the sternoclavicular joint The average age was 26 6 years In thirty-nine cases there was marked overlapping and misplacements of the fragments Traction was used in thirty-two cases, some form of ambulatory dressing being used later

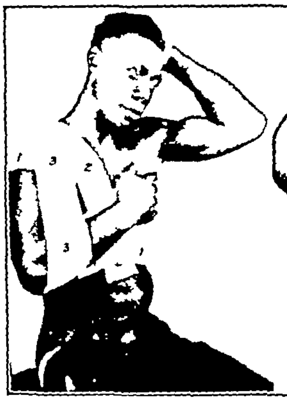

Fig 5—Adhesive strip 3 applied

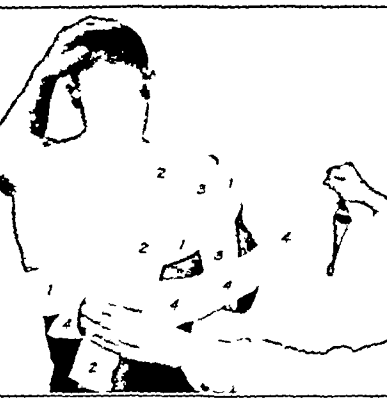

Fig 6—Adhesive strip 1 crossing the back obliquely around to the front of the chest from the uninvolved side of back and axilla The termination of adhesive strip 2 and the commencement of adhesive strip 4 are shown The latter passes horizontally across the back then across the lower third of the arm on the involved side and then around in front across the forearm (see fig 7) The posterior application of strip 3 is also shown

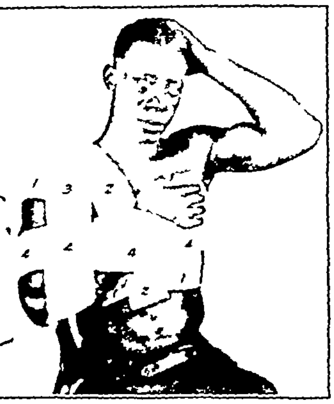

Fig 7—The completed dressing, showing the elbow flexed with the forearm against the chest and adhesive strip 4 horizontally crossing the arm and forearm ending at the point where it commenced Cotton should always be placed between skin surface and the adhesive strips and the forearm

The final position was good in fifty cases fair in thirty-seven and poor in fifteen Functional results were excellent in seventy-five cases, fair in twelve and poor in five

Traction with the arm in a right angle abduction splint (devised by the author) and 90 degrees of external rotation at the shoulder joint[1] was used in every moderate or severe injury to the shoulder Traction was also used with success in those cases which showed marked overlapping and the cases that were complicated by involvement of the sternoclavicular articulation

Open reductions were done in three cases for marked overlapping of the fragments, but in no case was it necessary after the development of the traction method

Different forms of ambulatory dressings were used, however, there were failures in every type to pull the overlapping fragments in place as well as a frequent misplacement for those cases which had been properly reduced Considerable pain and discomfort from these dressings were also encountered as a result of pressure, interference with circulation, irritation of the skin, bulkiness and other complications In the majority of the cases in which the adhesive dressing or the traction method was used, none of these complications were encountered

All fixation was removed at the earliest possible moment and hot baths and active and passive motion were commenced

SUMMARY

1 When good position of a fracture of the clavicle is present without a joint complication, it is best treated by the simplest of ambulatory dressings

2 Perfect anatomic position is not always necessary for perfect functional results

3 It is very doubtful whether the average ambulatory dressing holds a fracture of the clavicle in position if the fragments have a marked tendency to be displaced

4 Any ambulatory dressing that would hold a fracture of such a type in place usually would have to be applied so tight that grave danger to the circulation would result, as well as great pain and discomfort to the patient, with the possibility of pressure necrosis

5 Traction should be used when there is a marked overlapping of the fragments in fracture of the clavicle or when there is a great tendency for these fragments to become misplaced

6 Shoulder joint complications should always be eliminated in every clavicle fracture, when present, they should be treated with the arm in abduction and external rotation with the patient in bed, some form of an ambulatory dressing being used later

7 Open reductions should never be done until traction has been given a fair trial

8 Hot baths with active and passive motion are of great aid following removal of the fixation dressing

5060 Parkway

Play Necessary for Mental and Physical Development—For years play was looked on merely as a sort of inevitable waste of time among children, but scientific study of the cultivation of these organisms has shown that play is in most respects the best, the ideal form of the exercise of the powers The young child perhaps learns more and develops better through its play than through any other form of activity Opportunity for varied play under healthful outward conditions is beyond doubt the chief need of children, comparative study of the mental and physical development of children to whom full opportunity for such play is given shows striking superiority, as compared with children to whom such opportunities are denied—Jennings Suggestions of Modern Science Concerning Education, p 46

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[1] Conwell H E Treatment of Acute Comminuted Fractures About the Elbow Joint South M J 20 579 585 (Aug) 1927

PRECOCIOUS PUBESCENCE AND MENTAL GROWTH

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Does precocious sexual maturation have a demonstrable effect on the curve of mental development? The problem is of theoretical and also of practical significance There is a vague, popular view, sometimes uncritically shared by the physician, that adolescence is a time when the backward child 'outgrows" his retardation The implication behind this optimism is that puberty produces some activator which will give a special impetus to mental growth

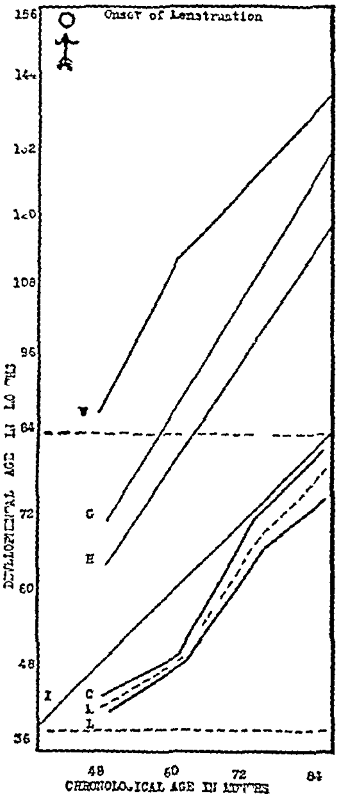

Fig 1 —Growth curve of patient 1 showing wide dispersion of developmental components Maturity levels are indicated vertically chronological age horizontally in months Mental development was not accelerated by precocious pubescence *W* weight *G* grip *H* height *I* ideal average of psychophysical growth *C* comprehension *M* mental level by clinical estimate *L* language

We have had an opportunity to inquire into this question in two well defined cases of puberty praecox at the Yale Psycho-Clinic One of these girls has been under our observation four years, the other five years We have made periodic mental measurements to determine the curve of mental growth, and these data have been reported in detail in a monograph dealing particularly with the psychologic aspects of the problem[1] The outstanding observations are briefly summarized here because of their medical interest

Case 1—J B a girl began to menstruate at the age of 3 years, 7 months Regularity of menstruation was promptly established and has continued Enlargement of the breasts was noted before her first birthday At 4 years she was 42 inches tall, at 7 years, 52 inches The corresponding weights were 50 pounds (22 7 Kg) and 73 pounds (33 Kg) Her statural development therefore has been definitely in advance of her chronological age Her statural configuration was that of a mature woman as early as 4 years of age Her facial appearance and general deportment, however, did not suggest any marked departure from the normal She attends a primary school and passes for an ordinary pupil

Detailed mental examinations were made when the patient was 4, 5, 6 and 7 years of age The results of these examinations are brought into comparative view in table 1 and in the accompanying chart The developmental ratings are expressed in terms of developmental age level as determined by psychometric tests or by a clinical estimate The summarizing estimate of the general mental level is based on a careful clinical weighing of numerous data furnished on each examination by means of an application of the diagnostic schedules in use at the Yale Psycho-Clinic The schedules and norms are based on a study of several hundred normal children in the early stages of development"[2]

The patient speaks with a voice rich in timbre and deep in tone, and she has a grave, restrained poise somewhat unusual for one of such tender years This subdued gravity has a thick, lethargic quality which is not childlike The emotional complexion of her mental life has been somewhat altered by her unusual physiologic status Superficially, however, she leads the life of ordinary children of her age, in her play interests her amusements and her social intercourse with playmates of either sex Puberty praecox has not had any striking effect on her emotional behavior

Table 1 —*Summary of Developmental Examinations at Four, Five Six and Seven Years of Age in Case 1*

	(1)	(2)	(3)	(4)
Chronological age at examinations	4 yrs	5 yrs	6 yrs	7 yrs
Developmental Items	Approximate Developmental Age Levels			
Height	5½ yrs	7 yrs		10 yrs
Weight	7½ yrs	9½ yrs		11½ yrs
Grip (right hand)	6 yrs			11 yrs
Carpal ossification	6 yrs	4 yrs	6 yrs	7 yrs
Drawing	4 yrs	4½ yrs	5¼ yrs	7 yrs
Drawing of man	3½ yrs	4 yrs	6 yrs	6 yrs
Language and vocabulary	5½ yrs	4 yrs	5½ yrs	6 yrs
Digit recall and Knox tube test	4 yrs	4 yrs	7 yrs	10 yrs
Number sense	3½ yrs ?	4 yrs	5½ yrs	6 yrs
Play interests	4 yrs ?	5 yrs ?	6 yrs	7 yrs
School report			Average	Average
Reading			6 yrs	7¼ yrs
General developmental level	3¼ yrs	4 yrs	5½ yrs	6½ yrs

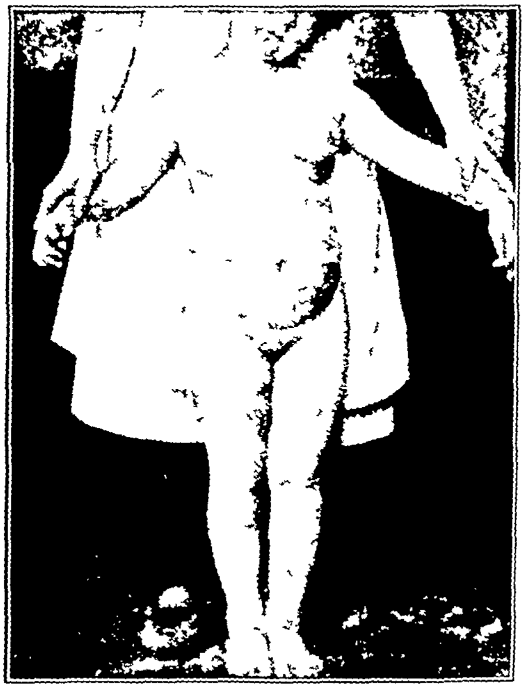

Fig 2 —Appearance of patient 1 at 4 years of age

In the sphere of general intelligence, there has not been any evidence of acceleration Indeed, the second examination at the age of 5 years suggested a retardation, which proved to be temporary Viewing the whole period from 4 to 7 years, it is clear that in general mental development this girl has consistently cleaved to the average or fallen somewhat below, in spite of the precocious onset of puberty and the regular recurrence of full menstruation.

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[1] Gesell Arnold The Influence of Puberty Praecox on Mental Growth Genetic Psychol Monogr 1 511 (Nov) 1926 Thoms H and Hershman A A A Case of Sexual Precocity Am J Obst & Gynec 6 549 (Sept) 1923

[2] Gesell Arnold The Mental Growth of the Pre School Child A Psychological Outline of Normal Development from Birth to the Sixth Year Including a System of Developmental Diagnosis New York Macmillan Company 1925

Case 2.—B E, a girl, was born one month prematurely. Her mother had suffered an attack of pneumonia one month prior to the child's birth. The patient walked at 2 years. Full menstruation began at the age of 8 years 3 months and has continued with regularity since. Roentgenograms of the skull, as in the preceding case, were negative as to causal factors.

Developmental examinations were made at 6, 8, 10 and 11 years of age. The results are summarized in table 2. At 11 years of age a careful appraisal of the emotional characteristics of the patient was made by comparing them with those of normal children 3 and 4 years of age. This objective, comparative study showed that in depth, range and quality the emotional life of the patient was actually less mature than that of young children of comparable mental age. In respect to general intelligence, the developmental quotient (chronological age divided by development age) has remained consistently between 30 and 35, during the whole period of five years. It follows, then, that sexual precocity has not had any marked effect on mental maturation.

COMMENT

If the two cases of puberty praecox here reported are typical we may conclude that precocious displacement of pubescence does not carry with it a coordinate deviation in the curve of mental growth. Stature and physical configuration are apparently more affected than the nervous system and the functions which underlie mental maturation.

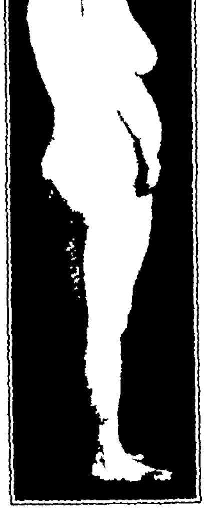

Fig 3.—Appearance of patient 2 at 8 years of age.

Table 2.—*Summary of Developmental Examinations at Six Eight and Ten Years of Age in Case 2**

	Examination 1	Examination 2	Examination 3	Examination 4
Date	11/30/21	2/27/24	4/29/26	3/29/27
Age	5 yr 9 mo	8 years	10 yr 2 mo	11 yr 1 mo
Height	41¼ in (5 yr)		52 in (10 yr)	54¼ in
Weight	40½ lb (5 yr)		93 lb (14 yr)	98½ lb
Language	Words and phrases Names five objects (2)	Sentences pronoun past plural (3)	Uses descriptive words (4)	Volume of speech somewhat greater than on exam (3)
	Points to nose and eyes Tells sex (2+)	Comprehends prepositions (3)		Comprehends 3 commissions (5)
Performance	Solves form board with error (2—)	Solves without error (3—)	Builds partial gate (3+)	Attempts to fold paper diagonally but fails
Drawing	Differentiates between stroke and scribble (2—)	Partial copy of circle (3—)	Draws good circle (3+) Draws crude man (3+)	Very slight improvement
Personal habits	Feeds self (2—)	Puts on shoes (3)	Goes on simple errands (4)	Moves about less
Approximate developmental level	2¼ years	2¾ years	3¼ years	3½ years
Developmental quotient	32	34	35	32

* The figures in parentheses indicate the estimated developmental level.

Growth is not a homogeneous, indivisible process which is chiefly conditioned, as some have suggested, by sexual development and differentiation. Growth is a complex of many components. The components interact, but there is also a high degree of specificity, even of independence, among these components. Pubescence is one factor which plays its part, but not with unlimited autocracy. It affects the emotional aspects of mental life more than the intellectual.

The nervous system among all the organs of the body manifests a high degree of autonomy, in spite of its great impressionability. It is remarkably resistant to adversity, even to malnutrition. This relative invulnerability gives it a certain stability in the somatic competition between the organ systems. It tends to grow in obedience to the inborn determiners, whether saddled with handicap or favored with opportunity. For some such biologic reason, the general course of mental maturation is only slightly perturbed by the precocious onset of pubescence.

52 Hillhouse Avenue.

CHRONIC ULCERATIVE COLITIS

OBSERVATIONS OF TREATMENT BY DIET *

JOSEPH W LARIMORE, M D
ST LOUIS

The clinical cure effected in a case of chronic ulcerative colitis by the use of vitamin rich foods led to the observation of subsequent patients on a similar diet. More or less initial increase in the diarrhea was controlled by the liberal use of camphorated tincture of opium (paregoric) or codeine. These drugs could soon gradually be reduced and discontinued. Bismuth salts have also been used in most of the cases. All cases have shown a definite healing reaction of the mucosa by proctoscopic observation, and the roentgenologic observations have shown a progressive improvement. Cases in the early stages of the condition have shown clinical, roentgenologic and proctoscopic cure. Cases in the later stages have shown great improvement, and the observations are being continued. This group, of which several cases are reported in abstract with illustrative roentgenograms, has been studied from the point of view of disordered physiology—hypermotility, impaired colonic absorption, local (colonic) malnutrition, and abnormal muscle function. These disorders operate in a vicious circle. The largely determining role of nutrition in the integrity of the colon in this condition, especially of its mucosa, seems demonstrated and appears dependent on the vitamin rich foods. The healing reaction of the mucosa has been prompt in all cases. This suggests some revision of the conception of the pathogenesis of the condition.

REPORT OF CASES

Case 1.—A patient observed two weeks after relapse, following an interval of fourteen months' freedom from ulcerative colitis, gave all the clinical, proctoscopic and roentgenologic signs of the condition (fig 1). With the sole treatment of a liberal soft residue diet enriched by tomato juice and cod liver oil, a complete return to normal colonic motility and stool form occurred in ten days. After five weeks the rectal mucosa was normal, occult blood had disappeared from the stools, and the patient had gained 6 pounds (2.7 Kg.). There was a clinical cure in that short period. Roentgenologically, the repair of the colon did not proceed so rapidly, and after sixteen months, during which the patient had steadily gained 20 pounds (9 Kg.), the distal colon did not show a normal diameter. The usual haustral and peristaltic forms appear and indicate a functional repair of the intrinsic neuromuscular apparatus. The greatly increased tonic posture of the muscle makes this patient yet liable to a relapse (fig. 2).

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* Read before the American Gastro Enterological Association May 3, 1927.

* From the Department of Medicine Washington University Medical School.

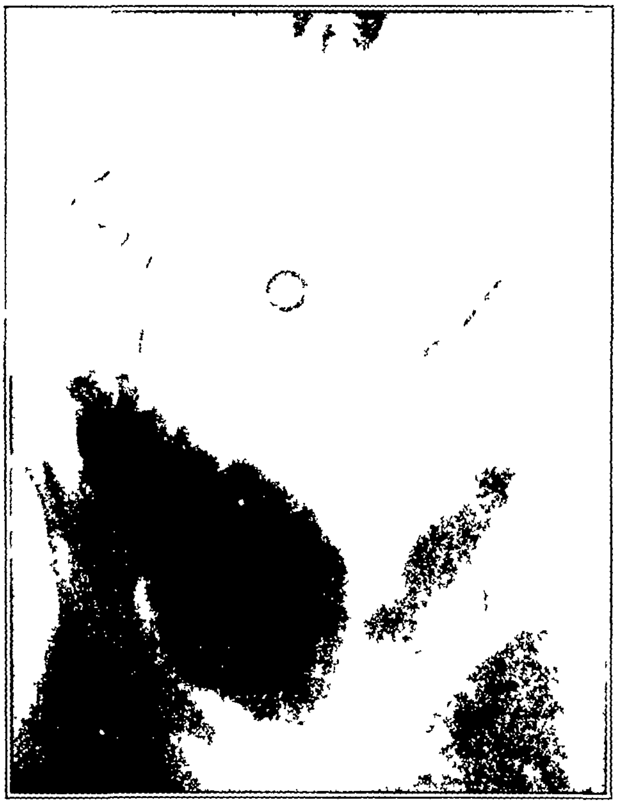

Fig. 1 (case 1).—Barium enema prior to treatment and two weeks after a relapse of diarrhea following a normal interval of fourteen months. The tubular contracture involved all segments except the cecum and there was marked muscular irritability. Proctoscopic examination showed a contracted, narrow rectum with an edematous mucous membrane having many small shallow ulcers and generally coated by a flaky gray exudate. The stools from six to eight daily showed mucus and blood. The patient's weight was 124 pounds (56.2 Kg.).

Case 2.—The benefit of a vitamin rich diet was strikingly demonstrated in a middle aged man with an early ulcerative colitis. There had been a lifelong tendency to diarrhea, and an achlorhydria was demonstrated repeatedly during the previous three years of observation. The diarrhea was not of the morning type, and was unaffected by hydrochloric acid administration. Diet had been markedly and increasingly restricted since childhood. In spite of all the usual medical measures the condition had progressed, with from four to seventeen stools occurring daily and showing blood, mucus and pus. The addition of vitamin rich vegetables to the diet produced complete compensation of function within ten days, with disappearance of occult blood. The patient has remained clinically well for two years. Observations secured by request now show a persisting achlorhydria and an irritable colon (fig. 3). The diet during the winter was not adequately varied, and the irritation contour of this colon was characteristic of an avitaminosis, prompt improvement occurring with the patient's return to a vitamin rich diet (fig. 4).

Case 3.—A young man had all segments of the colon involved. Careful treatment by others had shown that all measures were ineffective, including the use of heterogeneous vaccine filtrates. Ileostomy seemed to be the next measure in treatment. It was allowable to observe the effects of the vitamin rich diet and this was instituted; opium sedatives and bismuth were also continued. This patient promptly gained 12 pounds (5.4 Kg.), which he has held. The mucous membrane as promptly became granulating instead of ulcerating, and the stools have gradually diminished from ten and fourteen to two and three daily (fig. 5). They have seldom since shown blood. The condition of the musculature has improved, but the heightened posture of tonus has not relaxed, and the anatomic characteristics have not returned sufficiently to be encouraging as to the ultimate outcome (fig. 6).

Case 4.—In an elderly man, who, when first observed, showed involvement of the left colon, there was a progression of the disease to involve the transverse colon also during a two months' absence from observation and advice. The total time elapsing before treatment was five months. A diet of liberal soft residue food, including tomatoes, lettuce and peaches, and cod liver oil was given. Opium and bismuth salts were used. Two blood transfusions were given. Improvement, slow in commencing, was continuous. The stools lessened from twenty to two and three daily. The mucosa became granulating and clean. There was a gain of 44 pounds (20 Kg.) in three months. This has been held. A marked improvement in the anatomic status of the bowel was shown roentgenologically. The diminished diameter or contracture is lessening.

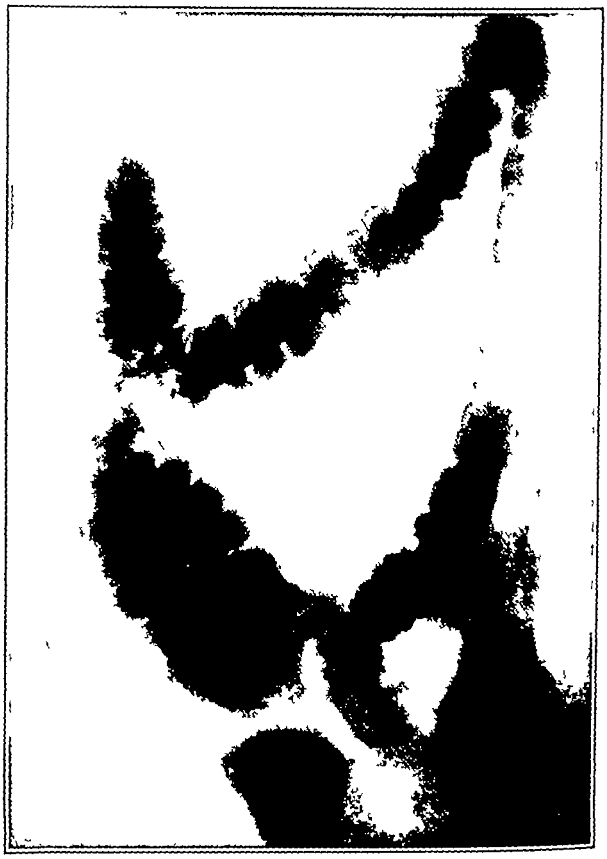

Fig. 2 (case 1).—Barium enema after fifty-seven weeks. Observations during this time showed a continuous return of the anatomic character of the normal colon but with very slow lessening of the contractured posture of the distal musculature. This posture was accompanied by a heightened sensitivity of the muscle and favored a relapse of the diarrhea. It was necessary to keep the stools soft because of this status of the muscle.

Case 5.—A middle aged man had the proximal segments of the colon involved and extremely narrowed (contractured). The symptoms had continued seven years. No notable improvement had occurred by general measures, and by the administration of vaccine filtrate instituted elsewhere. No notable improvement followed the dietetic treatment. An ileosigmoidostomy was made Colectomy could not be completed because of the patient's reaction at the operation Death occurred three days after operation Autopsy showed that the mucous membrane of the involved segments had been replaced by cicatricial tissue without any epithelium This healing was complete Transition from this to the normal bowel was abrupt Necrosis, rather than healing, had occurred in the abdominal incision, demonstrating the extreme malnutrition of the tissue cells generally The muscular coats of the colon showed histologically a slight replacement fibrosis

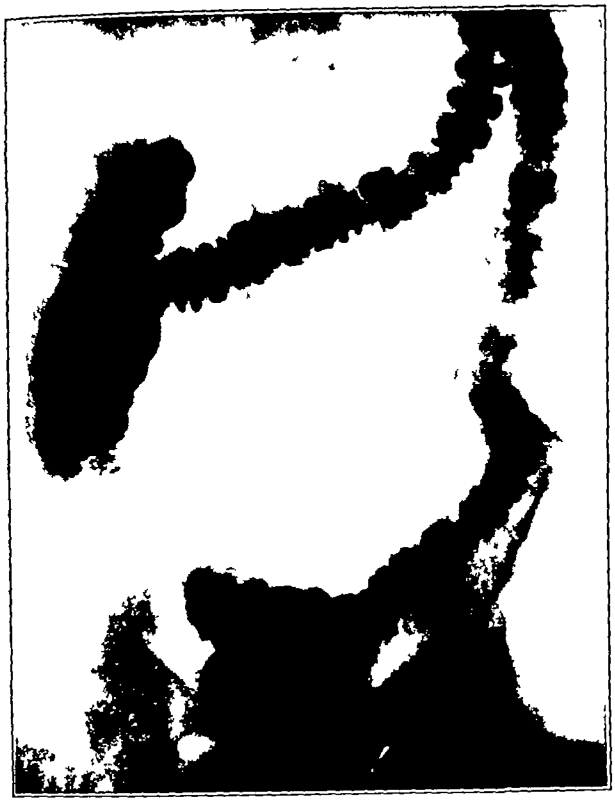

Fig 3 (case 2) —Barium enema, secured by request after two years of normal function and at a time when there was a tendency to frequent defecation as ociated with a reversion to a limited diet The serrated haustral contours show the irritability of the bowel, and are characteristic of avitaminosis Gastric achlorhydria persists

COMMENT

Observers are agreed that chronic ulcerative colitis is usually, if not always, a sequel to some initial insult, which is often of determinable etiology This institutes and leaves a disturbance of function in the involved segments These factors in the vicious circle of altered total function are interrelated and interdependent, and it is all but impossible to consider them separately The hypermotility progresses from the irritable neuromuscular peristalsis of the first stage (fig 3) to the hypersensitive disordered contraction of the later stages (figs 1 and 5) Absorption is forestalled by the hypermotility and impaired by the injury to the mucosa and lymphoid tissue McCarrison's[1] classic studies have demonstrated the injury to the intestinal mucosa by an avitaminosis Cramer[2] has shown that the atrophy of lymphoid tissue is among the first effects of vitamin deficiency, and also that "the condition of the intestinal mucous membrane varies, even on natural diets, with the richness of the diets in vitamins" Wolbach and Howe[3] show that the scorbutic state is characterized by the inability of the cells of the supporting tissue to produce and maintain intercellular substance

The musculature of the colon progressively changes from its neuromuscular functional status in the first prodromal stage (fig 3) to the spastic irritable muscle of the intermediate stages (figs 1 and 5) and to the contractured muscle in the late stage, the latter showing only very late some atrophy and fibrosis Woodward[4] comments on 'the little or no tendency toward the development of a fibrillated matrix, a fact which explains why it is that the possibility of resolution and ultimate recovery always remains, even in those cases of chronic dysentery in which there has been ulceration and sloughing, except when too large an area of the mucous membrane has been destroyed" The residual contractured posture of muscle tonus (figs 2 and 6), with or without neuromuscular integrity, persists in early as well as in late cases, even when by all other criteria cure is complete This factor tends to a relapse of the syndrome Hurst[5] has emphasized the need of maintaining by diet a soft stool in cured cases of this condition The relation of the intrinsic nerve tissue of the bowel, its irritability, degeneration, and disappearance in the various stages need further observation

The operation of the vicious circle of malfunction has been shown by its correction through diet and protective measures to be independent of the problems of a specific or nonspecific bacterial etiology The defense and the healing reaction of the mucosa have constantly

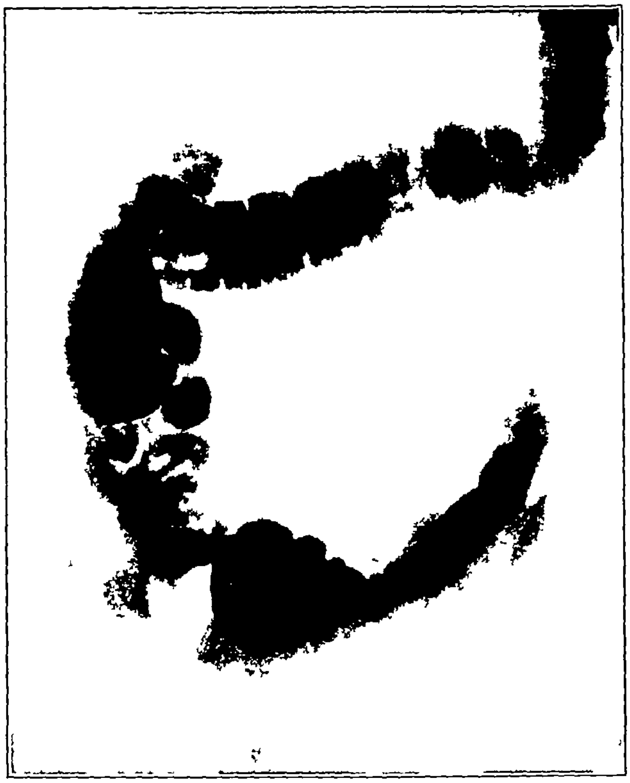

Fig 4 (case 2) —Barium enema after nine weeks of a diet corrected by enrichment with more vitamin containing foods Bowel function returned to normal with one soft formed adequate stool daily improved in the cases observed Grant[6] has demonstrated the permeability of the intestine to bacteria as related to the disturbed ratios and deficiencies of vitamins C and D The inflammatory reaction occurs in the mucosa The muscle shows only the slightest round cell infiltration, and only in very late cases a scant diffuse polymorphonuclear invasion

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[1] McCarrison Robert Studies in Deficiency Diseases London Frowde Hodder Stoughton 1921

[2] Cramer W On Mode of Action of Vitamins Lancet **1** 1046 1050 (May 26) 1923

[3] Wolbach S B and Howe P R Intercellular Substances in Experimental Scorbutus Arch Path & Lab Med **1** 1 24 (Jan) 1926

[4] Woodward J J Medical and Surgical History of War of Rebellion 1861 1865 Washington Government Printing Office 1870

[5] Hurst A F Ulcerative Colitis Guy s Hosp Rep **71** 26 (Jan) 1921

The conception that vitamin deficiency is a factor in diarrhea and may be a factor in severe colitis is not new, except that it can be an underlying and largely determining factor in this severe colitis, which from some points of view appears to be an infectious process Grundzach[7] predicates a colitis avitaminosa from his clinical observations in chronic diarrhea Attention to the dietaries of groups of people and also to the habits of many individuals suggests a vitamin poor status of their nutrition They are at best without reserves and on the threshold of vitamin deficiency This becomes actual with adverse conditions The observation in these cases demonstrated the tolerance of the bowel to a diet more varied and larger than is usually used in such conditions, and the resulting greatly increased tendency to healing of the mucosa All vitamin rich foods have been used, and as yet no effort has been made to observe the influence of different vitamins or varied ratios Great excess of vitamin B is essential

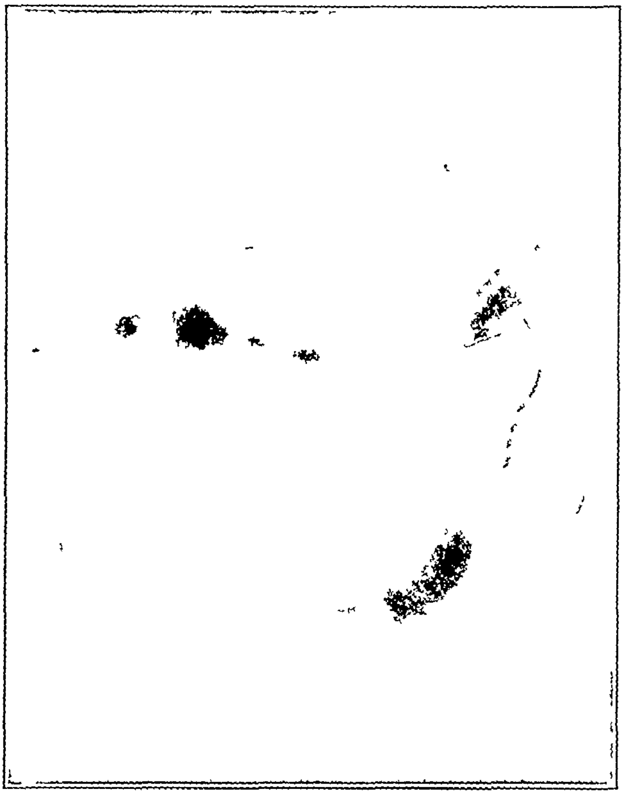

Fig 5 (case 3) —Barium enema after two weeks of increased diet showing extreme irritability and tubular contraction This had increased with the more varied vitamin rich diet The stools persisted at the rate of eight daily Proctoscopic examination showed a contracted rectum with an edematous friable superficially ulcerated mucous membrane with much mucopurulent sanguineous exudate The weight of the patient was 130 pounds (59 Kg)

The relative importance of other vitamins is undetermined from these clinical observations Woodward's[*] study of war records and material constantly connects the improvement and cure of diarrhea and dysentery with the inclusion in the dietary of the troops of fresh and raw vegetables At the same time, the failure of medicinal measures is noted The association of the 'scorbutic state" with dysentery is emphasized, and corneal ulceration and the condition of xerophthalmia are described

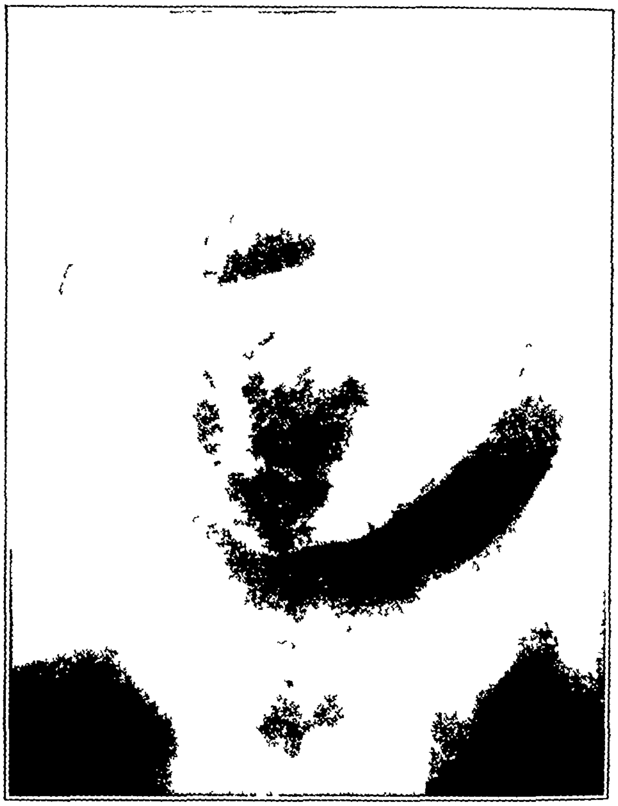

Fig 6 (case 3) —Barium enema after sixty four weeks of dietetic treatment showing the extent reached by the continual widening and lengthening of the segments and the increasing flexibility of the wall with a suggested return of haustra The stools decreased to two and three daily

These observations have shown that the condition of ulcerative colitis improves inversely to the duration of the disease, with the addition to the diet of a type of food hitherto generally excluded in diarrheal states, these foods being those rich in vitamins The healing reaction of the mucous membrane is prompt The symptomatic improvement of this chronic diarrheal condition on restricted diet is only apparent and not actual Such restricted diets are inadequate for maintaining or restoring tissue integrity The acquired posture of increased tonus of the muscle persists, and is one of the factors tending to cause a relapse in chronic ulcerative colitis

Beaumont Medical Building

First Seriatim Study of Human Growth —Philibert Gueneau de Montbeillard (1720-1780) known best for his work on ornithology which forms a part of Buffon s "Histoire naturelle ' inoculated his son for smallpox in 1766 This was fully fifty years after the introduction of the practice of direct inoculation against smallpox into western Europe, but thirty years before Jenner s discovery —Scammon, R E *Am J Phys Anthropol* **10** 330 (July-Sept) 1927

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[6] Grant A H Effect of Calcium Vitamin C Vitamin D Ratio in Diet on Permeability of Intestinal Wall to Bacteria J Infect Dis **39** 502 (Dec) 1926

[7] Grundzach Ignacy Chronic Diarrhea in the Light of Our Knowledge of Vitamins (Colitis Avitaminosis) Polska Gazette Lekaroka Warsaw 1924 p 226

Clinical Notes, Suggestions and New Instruments

BROMIDE ERUPTION ON HARD PALATE

Frederick H Dillingham, M D and Lawrence K McCafferty, M D, New York

The cutaneous eruption which results from the ingestion of the salts of bromide and iodide is by no means rare However, an eruption produced by the halogen group on the mucosa is unusually rare So far as we can ascertain, there are only two references pertaining to this subject In 1904, Dr Lotta Wright Myers[1] reported the case of an infant, aged 6 months, who developed a very unusual bromide eruption after the ingestion of a small quantity of potassium bromide The interesting feature in this case is the fact that the child developed a bromide lesion on the tongue Dr Myers stated that while a few cases simulating hers, from the cutaneous point of view, have been reported, there had not been any instances up to that time of a bromide eruption occurring on the mucous membrane from one of the bromide salts Dr Arthur Hall cited by Dr Lotta Wright Myers, had reported a similar eruption resulting from the ingestion of potassium iodide, in which there was one lesion on the tongue These are the only two cases in which the halogen salts produced lesions on the mucous membrane so far as we can discover *from the literature*

The case seen by us differed from these two in that the patient was an adult who developed lesions on the hard palate in association with characteristic lesions on the arms and legs The patient was presented at the Academy of Medicine, New York, before the Section on Dermatology Prior to presentation, she was seen by Dr Elias Abramowitz, who has had much experience with cutaneous manifestations produced by various drugs, but who, up to that time, had never seen an eruption of the mouth produced by any of the halogen group

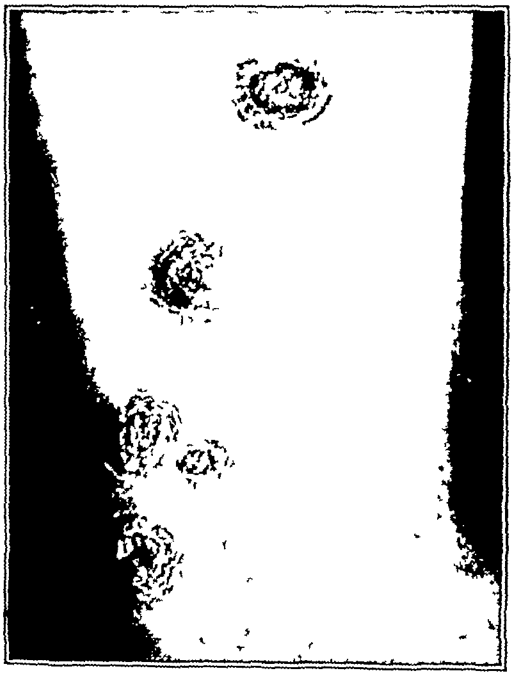
Fig 1 —Characteristic lesions of bromoderma

REPORT OF CASE

K M, aged 50, a Russian Jewess, housewife consulted Dr Samuel Weiss for nervousness Dr Weiss prescribed a bromide mixture, of which she took three doses in one day, with subsequent nausea The medicine was discontinued by the patient A few days later, a cutaneous eruption developed on the arms and legs The patient felt so bad at this time that she remained in bed The eruption appeared on the roof of the mouth two weeks after she had taken the bromide mixture, or one week after the cutaneous eruption appeared

When she was seen by us recently in the department of dermatology of the New York Polyclinic Hospital, having been referred by Dr Weiss, she presented large elevated and crusted lesions on the arms and legs, from 25 to 30 mm in diameter When the upper plate of the mouth was removed, there were two grayish, granulomatous elevations about 18 mm in diameter, in the posterior aspect of the hard palate, slightly separated by the median line of the hard palate These mouth lesions were somewhat painful

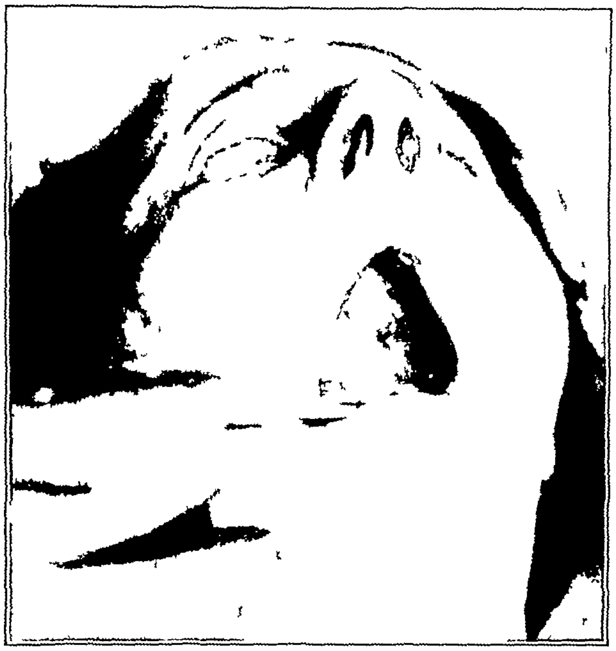
Fig 2 —Granulomatous lesion on the hard palate caused by bromide

We gave the patient tenth-normal saline solution intravenously according to Wile s technic and she improved rapidly We therefore report this case as one of bromoderma occurring on the hard palate in an adult in association with characteristic lesions of bromoderma on the body All lesions promptly disappeared under saline therapy

SUMMARY

Innumerable cases of halogenderma have been reported, only two of which occurred on the mucous membrane According to Wile, Wright and Smith, it was shown that ingested bromide displaced the chloride in the blood and that apparently the kidney, readily filtering both chloride and iodide, reacted differently to the salts of bromine These tend to be stored up after their ingestion, owing to their difficult filtration through the kidney epithelium The constant ingestion and gradual storing up in the body of bromide (small amounts being eliminated through the bowel) leads to the clinical phenomena known as bromism Knowles[3] states that any part of the cutaneous surface which was previously irritated is more prone to be the site of bromoderma Our patient wore an ill fitting upper plate in her mouth, and the part of the hard palate that was involved was the place of greatest pressure We are convinced that the bromoderma on the hard palate was produced by the friction of this plate against the mucous membrane

114 East Sixty-Second Street

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[1] Myers Lotta W A Rare Bromide Eruption J Cutan Dis 22 231 (May) 1904

[2] Wile U J Wright C S and Smith N R A Preliminary Study of the Experimental Aspects of Iodide and Bromide Exanthems, Arch Dermat & Syph 6 529 (Nov) 1922

[3] Knowles F C Unusual Cases of Bromide Eruption in Childhood, New York M J, March 20 1909

CHARCOT'S FOOT*

RALPH H. MAJOR, M.D., KANSAS CITY, KAN.

In the case of Charcot's foot reported here, the picture presented by the patient's feet, as shown in figure 1, was very striking. At first glance it suggested a developmental anomaly or the condition of feet that have been treated to some mutilating process, such as the classic foot binding in China. The patient's statement that he formerly wore number 10 shoes but now wore nothing larger than a 6 added at first to this confusion of the disease picture. A careful history with the results of the examination made clear, however, what the condition really was.

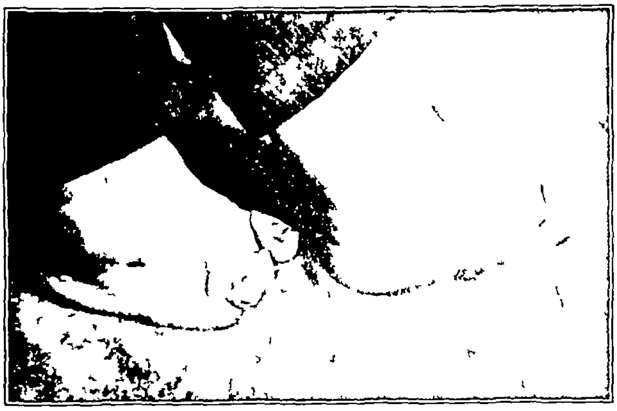

Fig. 1.—Appearance of feet in Charcot's disease.

In 1910, the patient, then aged 46, weighed 350 pounds (159 Kg.) and wore number 10 shoes. He was at that time employed in an occupation that kept him on his feet a great deal, and calluses appeared on the soles of both feet. Following these calluses, an abrasion appeared on the ball of the right foot, which gradually, in the course of a few months formed a chronic ulcer, which the patient described as about the size of his thumb nail. This ulcer grew deeper and deeper and presently exposed the distal end of the metatarsal bone of the first toe. This bone broke off and later other pieces of bone were discharged from the base of the ulcer. A few months later, a similar ulcer appeared on the ball of the left foot and the same process was repeated, pieces of bone being discharged over a period of several months. The patient was much impressed by the fact that the process in both feet was entirely painless, although the feet were markedly swollen.

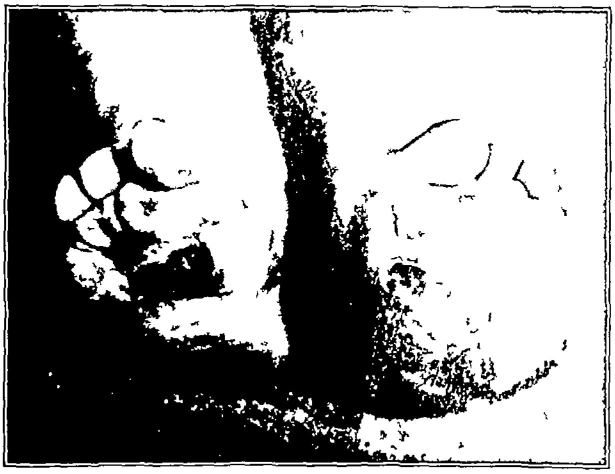

Fig. 2.—Ulcers on soles of feet.

He consulted a physician at that time, who found, according to the patient's statement, that he had a positive Wassermann reaction and started him out on treatments consisting of mercury, iodides and arsphenamine. The condition of the feet gradually improved; the discharge of bits of bone ceased, the serous fluid which had been exuding from the ulcers disappeared, and the patient's feet seemed well, except for the presence of an ulcer on the sole of each foot, which persist at the present time. Following the discharge of the bones from the feet, the feet gradually became much smaller, "shrunk up" as the patient expressed it, until in the course of approximately two years they reached their present size.

Physical examination of the patient showed the right pupil to be larger than the left. The right pupil did not react to light and the left pupil reacted very sluggishly. Both pupils reacted actively in accommodation. The heart and lungs were clear. The blood pressure was 109 systolic and 73 diastolic. The extremities showed unusually small feet (fig. 1), both with ulcers on the soles (fig. 2). The knee kicks were absent.

The urine was normal except for a faint trace of albumin; the blood count was normal, the blood Wassermann and blood Kahn reactions were negative, the urine did not show any abnormality, and the spinal fluid was negative for globulin and gave a negative Wassermann reaction.

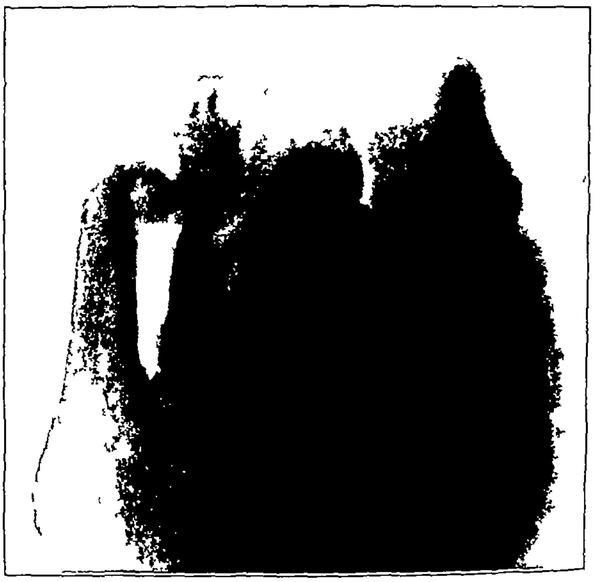

Fig. 3.—Roentgenographic appearance of Charcot's foot showing general distortion and small loose pieces of bone scattered around bone of great toe.

Roentgen-ray examination of the feet (fig. 3) showed distortion involving the cuboid, navicular and cuneiform bones, the metatarsals and the phalanges, with almost total destruction of the phalanges and the heads of the metatarsals in both feet. There was no evidence of osteomyelitis. The plate also showed several small, loose pieces of bone scattered about the bones of the great toe in both feet.

The patient gave a history of a primary sore in 1892, which received only local treatment. This unusual picture is an example of Charcot's foot involving both extremities. The history of syphilitic infection, the development of ulcers on the soles of the feet, the painless arthritis with destruction of bone and the marked improvement under antisyphilitic treatment seems to make the diagnosis certain. The patient also has abnormal pupillary reactions, absent knee kicks and a positive Romberg sign. This condition, which is unusual, has been described by Knaggs,[1] who referred to ulceration on the sole of the foot, with discharge of sequestrums.

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* From the Department of Internal Medicine, University of Kansas School of Medicine, Kansas City, Kan.

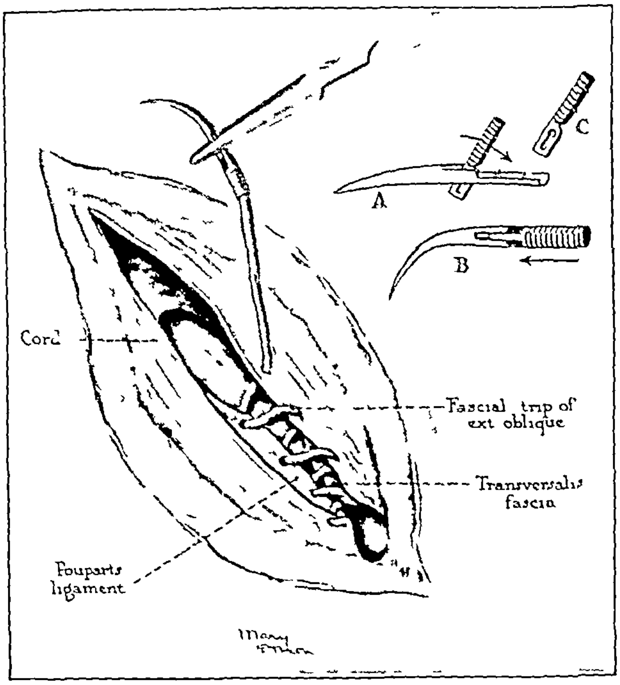
1. Knaggs, R. L.: The Inflammatory and Toxic Diseases of Bone, New York, 1926.

A NEW NEEDLE FOR FASCIAL SUTURING*

Clarence G Shearon, M D, Chicago

After witnessing numerous operations for the repair of inguinal hernias by the autoplastic method of Dr L L McArthur, and after seeing the need of a more efficient means of fascial suturing, I designed the needle here described

The shape of the needle may be either half curved, as shown in the accompanying illustration, or full curved if desirable The needle is a bivalved hollow cylinder which opens and contains three rows of teeth The end of the fascial suture, cut close to the muscle origin, is placed therein The cylinder is closed and then locked by means of a locking hinge joint This locking is accomplished through the medium of a square pin fixed in the body of the needle, which passes through a keyhole slot in the tongue of the top half of the cylinder Thus, when the square pin is in the rounded end of the keyhole slot, the top half of the cylinder opens and closes like an alligator jaw After the cylinder is closed, the top half is slid backward, thus slipping the rectangular portion of the keyhole slot over the square pin and locking the joint The sliding of the top half of the cylinder is most easily accomplished by the use of tissue forceps with three teeth The single tooth is inserted in the crevice between the top half of the cylinder and the solid body of the needle The other half of the tissue forceps with the two teeth is hooked over the rear end of the lower half of the cylinder and pressure is applied



Technic of use of needle for fascial suturing *A* cylinder open *B* cylinder closed *C* keyhole slot in tongue of top half of cylinder

This needle furnishes considerable aid in technic in that it grasps the end of the fascial suture directly, pulls it through Poupart's ligament with ease, and makes a hole about the size of the fascial suture without undue tearing or splitting of the fibers As suggested by Dr S W McArthur, after the needle has been pulled through the fascia, the suture strip is pulled taut and held by 6-inch curved forceps, the jaws of which are wrapped with cord tape to prevent crushing This relieves the tension on the needle while the next suture is being made

In using the needle precaution must be taken to grasp below the jaws of the needle with the needle holder, because the force of the holder will spring the jaws of the needle so that it will neither lock nor hold the fascia An ordinary needle holder may be used if necessary, but one with the jaws hollowed to fit the needle is preferable and not so liable to damage the needle

The accompanying illustration is in no way intended to demonstrate the technic of a radical hernia repair but merely to show how the needle is used However, the reader should note that the cord is not transplanted and that the fascial suture has been taken from the lower flap of the external oblique muscle Whether or not the cord is transplanted or the suture taken from either the upper or the lower flap or both is purely a matter of choice by the operating surgeon

This needle has been used in approximately forty operations for hernia by the attending surgeons of Dr McArthur's service

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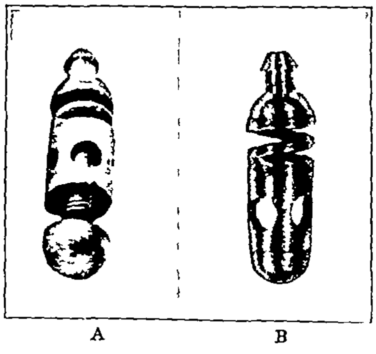
* From the St Lukes Hospital

ANALYTIC BUCKET

Moses Einhorn M D New York

Further experimentation with my analytic bucket has revealed to me that the technic of attaching the gauze strips to the cavities in the bucket by means of melted paraffin is not the best that might be employed, and I have modified the bucket so that there is no necessity for attaching the test strips As indicated at *A* in the illustration, the bucket is now constructed so that a space is left between the central column and the outer shell, and it is in this space that the paper test strips are inserted There are four openings or fenestrae in the outer shell, so that the fluids may take effect on the test strips The bottom of the central column is so threaded that the bottom of the bucket may be screwed to it In place of attaching the gauze strips by paraffin, as was formerly necessary the technician need now only to unscrew the bottom part of the bucket and insert in the space between the outer shell and the central column the paper test strips prepared with Topfer's solution, phenolphthalein, blue litmus and benzidine which are used in this bucket These paper strips are especially prepared, so that they exactly fit the openings provided for them After making the test, the examiner may note the reactions of the strips through the fenestrae or openings provided for that purpose (*B*) After the test is finished, it is necessary to unscrew the bottom part and the strips are easily removed by a sharp pointed instrument The advantages of this modification are that paper test strips are used, there is no more need of using paraffin to hold the strips, and there is no danger of the strips becoming loosened or falling off The bucket is still used in the same fashion as described in my previous article[1] with the exception that since there are only four fenestrae in the new bucket in place of the original five, the examiner must substitute a plain paper strip for one of the four mentioned if he wishes to test for bile



Analytic bucket *A* space between central column and outer shell for insertion of strips of test paper, *B* fenestrae for observation of reactions of test paper

286 West Eighty-Sixth Street

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[1] Einhorn Moses Analytic Bucket for Quick Qualitative Analysis of Gastric Content and for Differentiating Bleeding Gastric and Duodenal Ulcers, J A M A 89 1333 (Oct 15) 1927

LOCALIZATION OF METALLIC FOREIGN BODIES BY ELECTRICAL MEANS

A W Murray Wright M D Philadelphia
Instructor in Surgery University of Pennsylvania

Finding that the localization of metallic foreign bodies, particularly broken needles and pins, was a difficult procedure at times, I designed the electrical localizer here described and had it made by George P Pilling & Son Company, Philadelphia By its use a small incision may be made, causing less deformity and contraction than results in large exploratory incisions of the palm Blood vessels and tendons are avoided and a minimum of trauma is performed

When using small incisions and probing or using a small hook for localizing a foreign body, I have often felt what appeared to be the needle sought, only to find on bringing it to view that it was fibrous tissue, a tendon or a nerve Accordingly, an instrument was developed that would register only when in contact with metal (fig 1) In this instrument known as an electrical foreign body localizer, a small electric bulb lights in a window when the electrical circuit is made complete by metal coming in contact with the two localizing points inserted in the incision directly over the foreign body (figs 2 and 3) The hooked ends are then slid under the needle, bringing it to the surface, or a closed hemostat is pushed down into the wound along the groove between the points, and the needle is seized and extracted (fig 4)

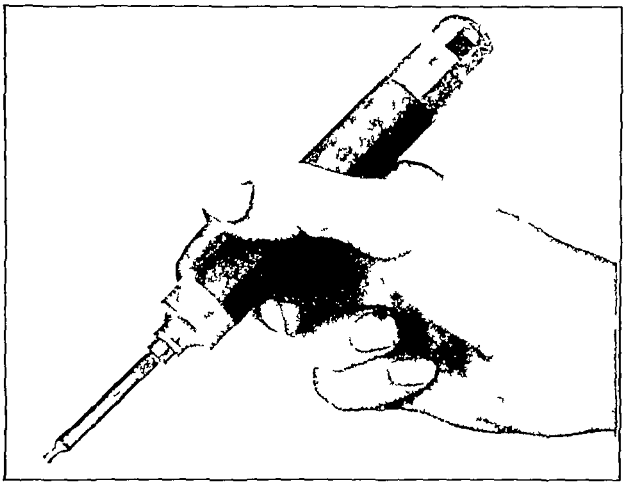

Fig 1 —Electrical localizer Attention is called to window where light flashes when contact is made

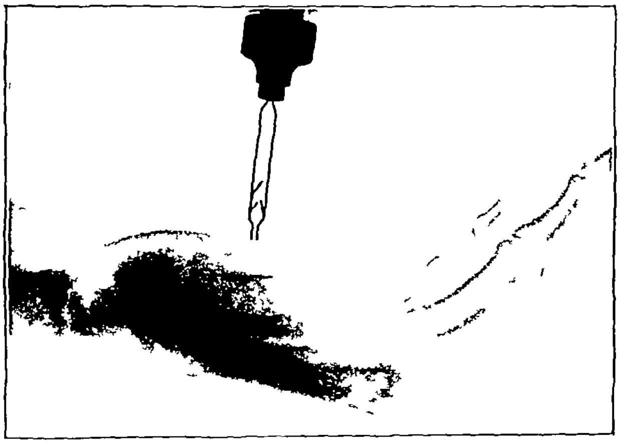

Fig 2 —Localizer entering incision

In connection with the localization and removal of foreign bodies, the following points should be remembered

1 In every case in which the presence of a metallic foreign body is suspected, splinting should be done when the patient is first seen, and before a roentgenographic examination is made If this routine is adhered to, the foreign body will remain where demonstrated in the roentgenogram

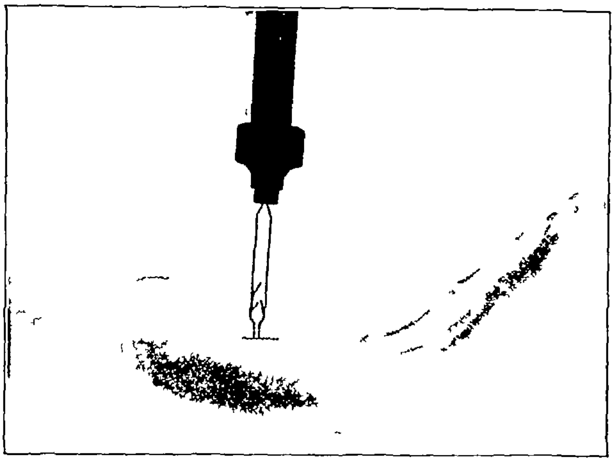

Fig 3 —Localizer making contact with broken needle

2 When the roentgen-ray examination is made, the head of a broken pin should be placed over the wound of entrance, and secured with a strip of adhesive plaster, as pointed out by Dr S W Moorhead The foreign body is then definitely located subcutaneously in reference to the wound of entrance Plates should be made in two planes to show direction and depth

3 Incision should be made at right angles to the long axis of the needle over its midportion, as advocated by Dr E L Eliason Failure to do this will often cause the knife to pass alongside and beyond the foreign body

Fig 4 —Appearance after removal of broken needle

4 There is a tendency among operators to cut too high (distally) above the foreign body in its relation to the nearest identifying joint

5 In cases of some duration in which inflammation and tenderness are present drainage with a rubber dam should be instituted and sutures should not be too tight

REPORT OF CASES

Case 1—E M a boy, aged 7½ years, ran a needle into the dorsum of the foot three months before admission The foot had been discharging pus ever since and was painful Roentgen-ray examination showed the needle in the plantar aspect of the foot Under local anesthesia with procaine hydrochloride an incision was made, the localizer inserted, the needle removed and a rubber dam placed in the wound, which was closed with two sutures The patient was discharged on the fifteenth day

Case 2—M S, a woman aged 33 who, two days before admission, broke a needle with her hand as the result of a fall, complained of pain in the hypothenar eminence

Roentgen-ray examination showed a broken needle in the palm of the right hand Under anesthesia with procaine hydrochloride, an incision was made, the localizer inserted and the needle removed by means of the hemostat The incision was closed with two sutures, and the patient was discharged on the sixth day

Case 3—E J, a girl, aged 1 year, developed a boil on the right thigh one week before admission which the mother thought may have resulted from the child's having sat on a needle Examination showed a hard indurated mass about 1 inch long transverse to the long axis of the thigh The skin over the mass was movable and there was pain when the mass was turned Without anesthesia, an incision was made, the localizer inserted and the needle removed with the hemostat The wound was dressed and the patient directed to return for further dressings

Case 4—J M, a woman, aged 35, had broken a needle in the palm fifteen years before with resultant stiffness of the middle finger A physician had used black salve to draw (?) it out Flexion of the finger caused pain Roentgen-ray examination showed an eroded needle in the middle of the palm Under local anesthesia, an incision one-half inch long was made and the localizer inserted, without, however, revealing the needle The incision was lengthened to 2 inches and an adherent cyst was exposed which, on removal, was found to contain the corroded and encysted needle The wound was closed with sutures Twelve days later swelling developed which was checked with magnesium sulphate dressings, and on the twenty third day after the operation the patient was discharged with the wound healed

Case 5—B J a woman, aged 27, ten days before admission ran a needle, which broke, into the lateral surface of the left palm near the carpometacarpal junction Infection was present, and the roentgen-ray examination showed the needle in the lower part of the palm Under gas anesthesia an incision was made, the localizer inserted, the needle removed with the hemostat, and the wound sutured On the thirty-fifth day the patient was discharged with the wound healed Recovery had been delayed by the infection which developed before the patient consulted a surgeon

Case 6—H G a man, aged 28, had stepped on a needle two days before while getting out of bed in the dark The wound caused by its entrance was visible, and there was pain on pressure over the plantar surface of the foot at the base of the great toe Roentgen-ray examination showed the broken needle Under anesthesia with procaine hydrochloride, an incision was made but the localizer did not reveal the needle The incision was left open and the hemostat inserted by means of fluoroscopic visualization The needle was buried in the tendon of the flexor longus hallucis, it was removed and the wound sutured The patient was discharged fifteen days later

Case 7—D L, a woman, aged 32, broke a needle in the left palm the day before admission while washing clothes She saved the remaining piece for examination Roentgen-ray examination showed the needle in the lower part of the palm Under gas anesthesia an incision was made, the localizer inserted, the needle removed and the wound sutured The patient was discharged on the twelfth day

COMMENT

In these recent cases the localizer proved successful in all but two cases, one in which the needle had been encysted for fifteen years, and the other in which it was buried in a tendon Both cases were unusual In the majority of cases, however, it should prove of value, particularly in cases seen in the office or dispensary, and to those who do not have ready access to a fluoroscope

The instrument is easily sterilized in alcohol, and should be permitted to dry before being used As it is small and self contained it is readily handled and does not interfere with surgical technic as do electrically lighted instruments with long cords that are difficult to keep in an aseptic condition Like other delicate electrical instruments, it should be tested before use and handled with the care it deserves

1820 Pine Street

Council on Pharmacy and Chemistry

REPORTS OF THE COUNCIL

ARGYROL OMITTED FROM N N R

Argyrol is included in New and Nonofficial Remedies as a brand of mild silver protein, U S P At the expiration of the period for which Argyrol stood accepted, the Council informed the A C Barnes Company that the advertising claims for therapeutic efficacy of this product went beyond those of mild antiseptic or protective value allowed for mild silver protein and asked that the firm present evidence to substantiate these claims, the firm was also informed that in order to permit the continued acceptance of the product the labels and advertising must bear the pharmacopeial title, mild silver protein, as a synonym The firm presented no satisfactory evidence for the therapeutic claims in question and refused to mention the pharmacopeial name on the labels and advertising of Argyrol The Council therefore voted to omit Argyrol from New and Nonofficial Remedies and authorized publication of the following report

W A Puckner Secretary

Argyrol was the first representative of a certain type of silver preparations consisting of colloidal solutions of silver or silver oxide in alkali proteins The silver of these colloidal preparations does not readily ionize, and they therefore lack the astringent and irritant actions of the ordinary silver salts, on the contrary, their viscosity gives them the soothing qualities of mucilaginous demulcents On this account Argyrol achieved considerable popularity, and other manufacturers introduced analogous compounds differing in the source of the protective protein but containing the silver in the same form and having practically identical therapeutic properties Following its usual practice in such cases the Council grouped these together under the common designation of "Protargin Mild," in contrast to another quite different type of silver compounds "Protargin Strong" represented by "Protargol," which contain considerable ionized silver and which therefore produce quite different effects The U S P X followed the same practice, and describes the 'Argyrol' type as 'Mild Silver-Protein" (Argento-Proteinum Mite) the 'Protargol' type as 'Strong Silver-Protein (Argento-Proteinum Forte)

Notwithstanding the clinical popularity of Argyrol, its antiseptic efficiency has been seriously questioned Bacterial culture tests have given variable results, and in the clinical results it has been impossible to distinguish definitely whether improvement is due to the antiseptic or merely to the protective action The Council weighing the evidence impartially and to the best of its ability has accepted the claim that Argyrol and the other Mild Silver-Proteins are useful in the treatment of inflamed mucous membranes, acting partly as mild antiseptics but 'largely as a mucilaginous demulcent and protective, and as a detergent, by dislodging pus The Council requires that manufacturers should not go beyond these claims, unless they have submitted acceptable evidence for their extension This restriction which is certainly sufficiently generous, has been conscientiously observed by all the manufacturers with the sole exception of the A C Barnes Company, the proprietors of Argyrol It has been necessary repeatedly to call the attention of this firm to their printed statements which went beyond these claims, which were sometimes dangerously misleading, as when they claimed high germicidal efficiency, without qualification, and which were sometimes inherently impossible, as the claim of penetration into tissues When these conflicts were called to the attention of the Barnes Company the firm did not submit facts but only arguments These were mainly to the effect that the firm was justified in making the statements because these had also been made by various physicians Nevertheless, having made the argument, the firm corrected the statements and the acceptance of Argyrol was continued However, other exa gerations or misstatements emerged at the next review, and the same course had to be repeated This has happened repeatedly

The Barnes Company has also deliberately refused to comply with another rule governing the acceptance of articles to N N R and continues to make claims for the composition of Argyrol and its radical difference from the other compounds of its class that the Council cannot accept as established by the evidence that has been submitted These points may be discussed seriatim

Misleading Statements as to Action —The following quotations from a two-leaf circular and a blotter, submitted to the Council in the summer of 1926, in response to a request for advertising are considered essentially misleading, directly or by implication Some of these claims would be admissible if suitably qualified, explained or restricted, but in the advertising there are no such explanations and restrictions

> Eradicates infections speedily
> Powerful astringent and antiseptic action
> Argyrol is an ideal germicide
> In gonorrhoea injections of 10 per cent Argyrol solution shorten the course of the disease
> Statistics show that 25 per cent Argyrol solution will prevent ophthalmia neonatorum
> In diseases of rectum (fissure fistula etc) Argyrol suppositories (20 per cent) are always palliative and frequently curative
> Argyrol is used in the treatment of gastric ulcer and chronic gastric catarrh
> To prevent infection ophthalmic surgeons use 25 per cent Argyrol solution for several days previous to cataract operations iridectomy etc
> Argyrol arrests virulently infective processes
> Argyrol is the best remedy in gonorrhoea and inflammations of genito urinary organs eye ear throat and nose

Before reporting to the Council on these claims, the referee endeavored to ascertain the reaction of the Barnes Company toward the more flagrant examples The referee therefore addressed them as follows

> The referee calls attention to the phrases used in two of the quotations That it is a powerful astringent and an ideal germicide Ideal would presumably mean an immediate 100 per cent success in all conditions and of course this is not attainable Astringent means a drawing together or puckering at the site of application which Argyrol does not produce The referee assumes that you will desire to omit these claims when your attention is called to them

The following reply was received to these suggestions

> '*Astringent* We copied that word in the connection used from the book An International System of Ophthalmic Practice edited by Dr Walter L Pyle If you will furnish us with reliable clinical data that Argyrol is *not* astringent we shall either include your statement in our circulars or abandon permanently the statements of Dr Pyle and many other surgeons who have observed that Argyrol does produce astringent effects We publish only what reputable physicians have stated in high grade medical literature While this matter is subjudice we shall refrain from stating that Argyrol is astringent Ideal is perhaps a strong term although such distinguished surgeons as Dr Darier of Paris and Dr Thomson of the Manhattan Eye Hospital (New York City) have each used the word Ideal in connection with their published studies of Argyrol We shall abandon the word in our future circulars

These are typical instances of the "concessions" that have been mentioned Dr Pyle evidently did not use the term 'astringent' in its ordinary sense The bald statement that "Dr Pyle and many other surgeons have observed that Argyrol does produce astringent effects' is not supported by evidence The loose use of the word 'ideal" proves nothing until the ideals are at least defined

Efficiency of Argyrol in Ophthalmic Prophylaxis —The referee also requested the published statistics in support of their statement that "statistics show that 25 per cent Argyrol solution will prevent ophthalmia neonatorum" To this the Barnes Company replied

> On the attached sheet we give you a few of the hundreds of references to the efficiency of 25 per cent Argyrol solution in ophthalmia neonatorum

This "sheet' gives six quotations only two of these contain any numbers, one of these states somewhat loosely that in a hospital and dispensary service of 900 to 1 000 deliveries a year, between 1 and 3 per cent of the infants developed ophthalmia under Argyrol prophylaxis, the other reports less than 0 5 per cent of ophthalmias in 1 334 obstetric cases under Argyrol prophylaxis Neither series can prove anything as to the efficiency of Argyrol unless the normal incidence of untreated cases in that series is known, or at least the incidence under some other form of treatment

Having failed to obtain the statistics from the Barnes Company, the Council attempted to do so from the men quoted in the "sheet", three of the six reside abroad and were not tried, one has died, one has not replied There remains only one, and his comments are illuminating His opinion, as quoted by the Barnes Company, reads

> 'I use nothing but Argyrol as a preventive treatment of gonorrheal ophthalmia acting on the advice of [the professor of ophthalmology] We use it continually in hospital and dispensary practice on account of the frequency of gonorrhea among that class of people Since using Argyrol in a 25 per cent solution I have diminished the proportion of ophthalmia cases in the hospital to between 1 to 3 per cent of the infants born out of a total service in the hospital and dispensary of 900 to 1 000 cases a year Without looking up the records which would take considerable time I should say we had less than a third of the cases of ophthalmia with Argyrol than we used to have with nitrate of silver as a preventive treatment Before applying Argyrol we used protargol in place of nitrate of silver but I should say from clinical observations that the Argyrol was much superior to either Another great advantage we find from using Argyrol is that we escape the irritative conjunctiviti which we often got from nitrate of silver instillation although but a single drop of 2 per cent solution was used and we immediately washed it out with salt water Nevertheless we had a large number of cases of irritative conjunctivitis which for a day or two would look very much like actual ophthalmia '

Apparently this was written some time ago, and if the Barnes Company had taken the precaution to check the subsequent history of Argyrol in this service, they would have found much less enthusiasm The reply to the Council's request for further information has quite a different tone

> 'I am always guided by the Professor of Ophthalmology in my preventive treatment of ophthalmia We used Argyrol for a time on his advice and I have no doubt what you quote from me was our opinion at that time but we have recently received other advice from the Ophthalmological Department and have therefore returned to nitrate of silver solution especially as I understand there is some law in Pennsylvania making this compulsory '

Having failed also in this attempt to obtain data for judging the efficiency of the Argyrol prophylaxis, the referee requested the secretary to have a search made through the available literature in English, for the last ten years, on ophthalmia neonatorum and the use of Argyrol in its prevention This also failed to bring any comparative statistics, but they showed that the majority of the recent writers at least adhere to the Crede silver nitrate prophylaxis The twelve writers[1] on the subject may be grouped as follows Only one (Copeland) advises Argyrol as a routine, all the others use or advise the Crede silver nitrate method, six do not even mention Argyrol for the prophylaxis (Ball, Casey A Wood, Duane Gifford, Park Ramsey) two mention Argyrol, but consider the nitrate more effective (N O Pearce Waldeck), and three express themselves definitely against the use of Argyrol (Allport, Cheney, de Schweinitz 'not to be trusted") Apparently ophthalmologists of experience have not been impressed by the "statistics' or other data, and would subscribe to the claim "25 per cent Argyrol solution will prevent ophthalmia neonatorium" only with the important qualification "sometimes—but not as often as silver nitrate ' The omission of this qualification makes the claim misleading in effect It must be added, in fairness, that man writers express themselves more favorably to Argyrol in the treatment of established ophthalmia

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[1] These were
Allport F Fourteen Points Concerning Ophth l Illinois M J **35** 64 (Feb) 1919
Ball Modern Ophthalmology ed 3 p 267
Cheney R C The Bactericidal Power of A **6** 648 (Aug) 1923
Copeland G G Blindness of the New Born A Canad M A J **8** 724 (Aug) 1918
De Schweinitz Diseases of the Eye ed 10 p 219
Duane Text Book of Ophthalmology ed 7 p 4
Gifford Harold Treatment of Gonorrheal C Med & Surg **21** 1 (Jan) 1916
Park L F Infant Blindness (Ophthalmia Neona Conservation of Vision Series issued by Bureau Instruction American Medical Association
Pearce N O in Abt s Pediatrics **2** 413
Ramsey W R in Abt s Pediatrics **1** 1142
Waldeck G M Ophthalmia Neonatorum J **21** 505 (Dec) 1922
Wood C A in Abt s Pediatrics **8** 365

When the foregoing report was submitted to the Barnes Company, they at last supplied some more definite figures, but these also failed to prove the prevention of ophthalmia neonatorum by Argyrol, for they were not sufficiently detailed to permit any estimate as to the natural variations of the incidence of ophthalmia in this service, and the paper contained intrinsic evidence that the series was probably not confined to specific ophthalmia neonatorum but included other forms of conjunctivitis

The Pharmacopeial Synonym—The rules of the Council provide that when a substance is admitted to the Pharmacopeia it will be retained in N N R only if "the official name is given prominence on the labels and in the circulars and advertisements of such articles" When the silver compounds of Argyrol type were admitted to the U S P X under the name of "Mild Silver-Protein," all the preparations of this type, which of course includes Argyrol, came under this rule, and the fact was brought to the attention of the manufacturers of these products in the fall of 1925 These have all carried out the provisions, with the exception of the Barnes Company The attention of the latter was again called to this requirement in the fall of 1926 They replied as follows

> We stand ready to prove by definite, differentiative, chemical tests the truth of our published statement that No other drug is, chemically like Argyrol We believe that your term Mild Silver Protein, is both arbitrary and vague it does not differentiate Argyrol from other silver products We consider it superfluous baggage that would tend to the substitution of other products included in your blanket term We, therefore object to placing Mild Silver Protein' on our labels and circulars When you brought this point up before we made a canvass of many physicians and surgeons who direct large clinics in various cities and found a unanimous corroboration of our objection to drown the identity of Argyrol in a sea of products that differ chemically from Argyrol"

The Barnes Company is of course quite within its rights in disagreeing with the Council policies, but, on the other hand, the Council cannot alter its policies at the behest of interested parties, unless it is shown by facts or by disinterested arguments that the policies are not in harmony with the interests of the public The argument that the Barnes Company found unanimous corroboration of their objection among physicians does not mean much unless these had both sides of the question fully and fairly presented to them, and the strong partisanship of the Barnes Company would not tend to make them good interpreters of the Council policies It must be remembered, in the first place, that the case of Argyrol does not stand by itself, but that it must be considered in its relation to the many other cases in which endless and sometimes dangerous confusion has arisen by the policy of manufacturers to hide or to deny the identity of their products with the official articles Prescriptions are still being written for Urotropine and Methenamine in the same mixture! In the case of the colloid silver compounds there is a very special need for the official title, to differentiate between the "mild' and "strong" compounds, which are used in quite different concentrations, and whose confusion would be uncomfortable at the least, and might have serious consequences Granting that Argyrol is sufficiently well known not to need that protection, how about Silvol and Solargentum and Vargol? How can a line be drawn between the products that are safe from confusion and those that are not safe? Experience has shown that there is only one fair way of enforcing rules, and that is to enforce them impartially If the rule requiring the pharmacopeial synonym is needed anywhere, it must be enforced everywhere, and that includes Argyrol

The Chemical Individuality of Argyrol—The Barnes Company does not deny that Argyrol comes under the U S P definition of 'Mild Silver-Protein" They contend, however, that this definition is not justified because it does not differentiate Argyrol from other silver products, or, more properly, from other brands of mild silver-protein, and they offer to prove by definite, differentiative chemical tests, that "No other drug is, chemically, like Argyrol" With complex mixtures like Argyrol such a demonstration may not mean very much, it would not be difficult to prove by chemical, physical and biologic tests that no pea is like any other pea The real question is whether the differences are significant, and with the silver preparations, that depends on whether they involve the silver or the protein components of the mixture The U S P definition was framed with a view solely to the nature of the silver component, as reflected in its ionization, leaving the protein vehicle to the option of the manufacturers, this doubtless on the basis of the generally accepted view that the silver is the active component, and that the proteins serve mainly if not solely as the vehicle for conveying the silver The essential question is, therefore, whether the chemical tests submitted by the Barnes Company demonstrate a difference in the nature of the silver-combination, or whether they are due merely to differences in the vehicle To decide this question, the Chemical Laboratory of the American Medical Association was asked to check the tests submitted by the Barnes Company for the differentiation of Argyrol from two of the other Mild Silver-Proteins, namely, Silvol and Solargentum

The Chemical Laboratory reports

'The so-called specific tests for differentiating between Argyrol and Silvol and between Argyrol and Solargentum submitted by A C Barnes Company, have been checked in the A M A Chemical Laboratory The tests in the main respond as described, but they do not appear to have bearing on the U S P X tests for mild silver-protein, particularly the quality of the silver component as indicated by the yeast test In some of the tests described, if the reaction materials stand for some time the results appear so nearly alike that the differentiation is practically impossible In our opinion therefore, the tests differentiate mainly the protein portion of the molecule, they do not indicate that Argyrol is essentially different from the other preparations in reference to the therapeutic component, i e, the concentration of silver ions, as indicated by the yeast test'

On the other hand, the pharmacopeial yeast test shows that Argyrol agrees with the other mild silver-proteins in the proportion of its ionized silver The agreement in this ionization is very striking Pilcher and Sollmann reported the following concentrations as necessary to arrest the fermentation by yeast, which is an index of its ionization (several figures after an article indicating differences in samples)

Argyrol 1 145 250
Argyn 1 180 330 500
Cargentos 1 167 280
Silvol 1 80 135 165
Solargentum 1 180 500 670
Vargol 1 500 910

It is evident that the differences between different samples of the same brand are as great as or greater than the differences between different brands There is a wide gap between the highest dilutions of these and the lowest of the strong silver-protein group, namely 1 3,300

All this does not mean that Argyrol and the other products are in all respects identical, any more than a syrup and a tincture of opium are identical On this account the Council has no desire to suppress the brand names but insists simply on the addition of the pharmacopeial name, partly because it does not see how it can fairly make exceptions to this rule, and partly because it believes it important that the mild silver-protein compounds should be identified by a group name to differentiate them from the strong silver-proteins Provided this is done—but this is an important proviso—the manufacturer may properly emphasize the differences in the vehicle Once it is clear that Argyrol is a Mild Silver-Protein, there can be no misunderstanding about the manufacturer's statement "No other drug is, chemically, like Argyrol", but this statement is misleading unless the essential similarity in the condition of the silver is made plain

It is evident that Argyrol cannot be continued in N N R if the manufacturers continue to make unsubstantiated and misleading statements in regard to its therapeutic actions and chemical individuality and if they continue to disregard the pharmacopeial title It is therefore necessary to recommend that the acceptance of Argyrol be discontinued, and that this report be published in explanation of that action

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2 Pilcher J D and Sollmann Torald J Lab & Clin Med 8 301 (Feb) 1923

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SATURDAY, MARCH 17, 1928

TRANSMISSION OF PROTEIN HYPERSENSITIVENESS FROM MOTHER TO OFFSPRING

Why an infant will develop a violent allergic reaction when coming in contact with some food substance for the first time has remained an unchallenged problem for many years When Ratner, Jackson and Gruehl of New York University and Bellevue Hospital Medical College undertook to study this problem systematically, a valid explanation became available These authors[1] first studied the role of placental permeability and corroborated the earlier statement of Kuttner and Ratner[2] that the animal species seem to be divided into two main groups, those that have a placenta through which heterologous substances can pass with ease, and those in which the placenta is more or less impermeable to the passage of such substances To the former group belong human beings, guinea-pigs and rabbits, and to the latter belong the ruminants Thus the authors established an essential premise, namely, that in the human being and the guinea-pig a placental permeability does exist

In their next study they analyzed the function of colostrum in the transmission of immune and other substances, and found that only in the ruminants does colostrum play a dominant part in the transference of substances from a mother to her offspring In their third study they analyzed the role of milk and found that the striking work of Paul Ehrlich in 1892, demonstrating the passage of immune substances through the breast milk of the mouse, was later shown by many other investigators to be true for the mouse but not for the guinea-pig, rabbit or human being Ratner, Jackson and Gruehl gave further evidence that the milk did not transfer any hypersensitiveness from a mother to her offspring

With this fundamental background established, namely, that there is a placental permeability in the guinea-pig and the human being, and that the colostrum and milk are negligible factors, the investigators in their fourth study approached the problem of transfer of protein hypersensitiveness from a mother to her offspring Earlier work of Rosenau and Anderson was corroborated Mother guinea-pigs were sensitized with horse serum before pregnancy, and it was shown that all offspring born of these mothers were sensitive at the time of birth On first contact with horse serum, given intravenously, the offspring died in acute anaphylaxis or developed severe anaphylactic symptoms This type of transfer of protein hypersensitiveness was found to be of a passive nature and lasted for only three months, exactly the length of time that passively transferred immunity would persist, as shown by Ehrlich This sensitivity, being of a passive nature, could not be transferred to the second generation

In the fifth study, the investigators took up their main problem to demonstrate whether it was possible to sensitize a fetus in the uterus of a mother who at the time of parturition was herself not sensitive First it was proved that normal newly born animals could be made sensitive to horse serum The investigators then took mother guinea-pigs in the last days of pregnancy and injected horse serum into them Litters born from one to three days after the mothers had been injected with the serum were divided into two groups, those which received an injection immediately after birth and those receiving their first injection when a month or more old The first group were shown to be uniformly nonsensitive, but those animals which were permitted to live a month were shown to have established a definite state of hypersensitiveness This state of hypersensitiveness could therefore have been the result only of contact with the horse serum while in the uterus, resulting in the development of a specific and active hypersensitiveness after birth Since they had shown that the permeability of the placenta in the guinea-pig and the human being are alike, these authors offer this active sensitization in utero, obtained experimentally in the guinea-pig, as explaining the bizarre manifestations of infants reacting allergically when coming in contact with a food for the first time

It is to be hoped that clinical evidence can be brought forth to substantiate these experiments The natural outcome of these studies should lead to a broad preventive outlook by obstetricians particularly, in their attitude toward any excessiveness or cravings in the mother's diet during pregnancy, and toward the influence that injections in general might have on the future sensitization of the unborn child

In an earlier investigation, Ratner, Jackson and Gruehl[3] presented evidence that the nasal passage may act as a portal of entry for dry substances, producing the basis for future allergic manifestations Now these investigators suggest another portal of entry through which sensitization may be brought about in the human race Obviously, much remains to be learned as to the manifold manners in which protein sensitization may become established Knowing some of the various mechanisms which may be at work, physicians may take active measures to prevent the occurrence of some types of protein hypersensitiveness

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[1] Ratner Bret Jackson H C and Gruehl H L Transmission of Protein Hypersensitiveness from Mother to Offspring 1 Critique of Placental Permeability J Immunol **14** 249 (Nov) 1927 2 The Role of Colostrum ibid p 267 3 The Role of Milk p 275 4 Passive Sensitization in Utero p 291 5 Active Sensitization in Utero p 303

[2] Kuttner Ann and Ratner Bret The Importance of Colostrum to the New Born Infant Am J Dis Child **25** 413 (June) 1923 Human Colostrum editorial J A M A **81** 662 (Aug 25) 1923

[3] Ratner Bret Jackson H C and Gruehl H L Respiratory Anaphylaxis Am J Dis Child **34** 23 (July) 1927 Respiratory Anaphylaxis editorial J A M A **89** 885 (Sept 10) 1927

PRACTICAL ASPECTS OF LOW RESIDUE DIETS

Dietetics is singularly subject to all sorts of fads and foibles Many of them have some basis in experience but fail because they represent generalizations assumed to be universally applicable, whereas they are supported only by reference to circumscribed conditions Others are merely the expression of enthusiastic expectations fostered by clever propaganda Perhaps the greatest dietetic errors rest on the implicit assumption of many untutored persons that all alimentary tracts are essentially alike Accordingly, if the dictum that "constipation is a national ill" meets with popular acclaim there is real danger that hundreds of delicate intestinal canals deserving the mildest of treatment will be insulted by a bombardment of roughage or laxative pills

In the promotion of intestinal potency the occasional need of the bland diet is in danger of being overlooked Hosoi, Alvarez and Mann[1] of the Mayo Clinic have recently remarked that there are many occasions when physicians or surgeons wish to use a diet with the least possible residue, particularly in the treatment of patients with diarrhea and following operations about the rectum or anus If the fecal residues can be made small enough and if defecation can be postponed for a week or more, not only will the patient be spared much distress but healing wounds can be kept clean Experimental observations in the Mayo Foundation have thrown further light on the rate of passage of many foods into the large intestine in which the mucous membrane of the colon absorbs little besides water They also indicate the character of the unabsorbed residues that may be expected from the use of various common foods Among those with the least residue are gelatin, sucrose, dextrose, concentrated broth, hard boiled egg, meat, liver, rice, farina and cottage cheese, among those with the largest residues are fruits, potatoes, bread, lard, butter, Swiss cheese, soft boiled egg, raw egg albumin, milk and lactose

The relative indigestibility of raw egg white which Bateman[2] demonstrated long ago in the Yale laboratory of physiologic chemistry has been verified in contrast to the widespread belief that there is nothing more nourishing than a raw egg The Rochester investigators found considerable evidence both in their experiments and in earlier observations that milk should not be given when it is desired to prevent bowel movements The large residue often left in the terminal ileum after the taking of milk may account for the fact that it is not well tolerated by many persons and that it makes them "bilious" This is a point that Hosoi, Alvarez and Mann think should be brought to the attention of physicians because there is a tendency on the part of many to prescribe milk and sometimes nothing but milk whenever they wish to give the digestive tract a rest They are prone to prescribe it also in cases of diarrhea, although it appears that it is one of the first foods they should interdict It has been the Rochester experience that milk has a bad effect on many persons with diarrhea who promptly get well when given nothing but meat or meat with a little pure starch and sugar As a practical advice it follows, in the words of Hosoi, Alvarez and Mann that the best basis for a low residue diet is lean meat To this might be added rice, hard boiled eggs, sugars (except lactose) and probably small amounts of fruit juices, tea and coffee The highest degrees of absorption could probably be secured by giving small amounts of food several times during the day Their experience with dogs, together with that of Beuttenmuller with a patient having a fistula in the terminal ileum suggests that less material will be carried into the colon if the diet is kept fairly dry These dietotherapeutic suggestions also must not be applied without due regard to the specific needs and alimentary peculiarities of the person under treatment

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A VICIOUS MEDICAL PRACTICE BILL

Osteopathic surgeon generals of the army, navy and public health service are a possibility if a bill (S 3592) introduced in Congress by Senator Copeland March 10 becomes a law The bill provides that the degrees doctor of medicine and doctor of osteopathy shall be accorded the same rights and privileges under governmental regulations" There is no indication that this mandate is to be limited in its operation to the government of the District of Columbia, although the rest of the bill is so limited If the bill is enacted, it may be, and no doubt will be construed to put osteopaths on the same basis as doctors of medicine throughout the entire federal government service

Both Senator Copeland's present bill and the earlier bill introduced by him at the instance of the Medical Society of the District of Columbia (S 3107) are fundamentally unsound They undertake to authorize and regulate matters that they do not accurately define Both bills recognize the practice of osteopathy as something distinct from the practice of medicine and from the practice of drugless healing, but neither gives indication as to what the distinctions are If the proponents of this legislation do not know the distinctions or fail to state them, how are law enforcement officers and the courts to find out what Congress intends by such legislation?

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[1] Hosoi K, Alvarez W C, and Mann F C Intestinal Absorption A Search for a Low Residue Diet Arch Int Med **41** 112 (Jan) 1928

[2] Bateman W G The Digestibility and Utilization of Egg Proteins, J Biol Chem **26** 263 (Aug) 1916

The recent Copeland bill undertakes not only to regulate the practice of a cult which is undefined even by its own devotees but also to authorize and regulate the practice of an innumerable category of other cults, so-called drugless healers, who under this bill obviously need not be drugless at all "Drugless healing," according to the bill, is "any system of healing that teaches that disease *may* be prevented, relieved, or cured without the use of drugs, medicine, or operative surgery " Any five or more adherents of any so-called drugless method of healing may, as a matter of right, demand that an official, permanent board of examiners be appointed, if this bill becomes a law, to represent and give dignity to each and every system of "drugless healing" they elect to cover by a petition The only limitation on the official recognition of any such system is that the petitioners must differentiate it from the unrestricted practice of the healing art, it may include surgery and the use of any and all drugs, if its proponents can find any one element of unrestricted practice that they are willing to forego

All of the elaborate provisions of Senator Copeland's bill for the protection of the public against fraud and ignorance in the treatment of disease are thrown to the four winds when it comes to the diagnosis of disease and its treatment by prayer or spiritual means, or by hygienic, dietetic or domestic remedies Any person is at liberty to engage in the business of treating disease by any or all of these agencies He need not submit evidence to any one as to age or moral character He need not have affiliation with any organized religious body He is not called on for evidence of professional or spiritual ability He is not asked to tell how, in order to adapt his curative treatment to the needs of his patients, he diagnoses the diseases from which they suffer He asks leave or license from no one, he registers nowhere, he simply opens an office or hires a hall, advertises his business by signs or otherwise, and proceeds to collect from the gullible public whatever he can for his services

Limitations of space prevent a discussion of other glaring defects in the pending legislation, such as those relating to the licensing of osteopaths to use drugs and to practice surgery, to the issue of licenses by reciprocity, and to the refusal, suspension and revocation of licenses What has been said, however, is probably sufficient to show the undesirability of the enactment of any such legislation The District of Columbia is the seat of the national capital, but its people have no voice in Congress to influence legislation there Its legislators are elected by the people of the United States outside of the District of Columbia, and are responsible and responsive to those who elect them All of this has been forcibly pointed out by the Medical Society of the District of Columbia in its recent appeals to the state associations for the support of its legislative program All of it applies with equal force now, when the medical profession of the entire country should unite in an appeal to Congress to dissuade it from the enactment of any of the bills that are now pending to regulate the practice of the healing art, of osteopathy, of chiropractic or of naturopathy in the District of Columbia

The problem of the District of Columbia is the problem of the entire United States Legislation by Congress is inevitably reflected in legislation in the individual states Physicians are protecting their own people when they urge their representatives in Congress to defeat such vicious legislation

Current Comment

JOHN HUNTER—MAN OF SCIENCE AND SURGEON

The present year marks the two hundredth anniversary of the birth of one of the greatest surgeons of all time, John Hunter The name of this truth seeker has been associated with that of Pare and Lister in the field of surgical progress Hunter was distinguished as a human anatomist, comparative anatomist and physiologist, in addition to being the founder of scientific surgery in England At the Lister Centenary last year the president of the Royal College of Surgeons, Sir Berkeley Moynihan, bracketed the names of Hunter and Lister, saying that they stood apart from all other men by reason of the innumerable gifts which they had conferred on mankind Garrison has remarked in his History of Medicine that Hunter's permanent position in science is based on the fact that he was the founder of experimental and surgical pathology and a pioneer in comparative physiology and experimental morphology Consequently Hunter may properly be regarded as "one of the great all-around biologists like Haller and Johannes Muller " Sir James Paget[1] wrote that Hunter's mind was set on science, while his business was practical surgery Thus, as Paget further reminds us, Hunter's mind, given to science, was engaged in practice, he associated surgery with science and made them mutually illustrative Before his time, surgeons had been "empirical", this word had been used not in its real sense of "experimental," but as meaning something discreditable, something not founded on "principles " Yet these "principles' were only thoughts exercised on insufficient facts, gradually but slowly becoming more nearly sure, but hardly applicable from one century to the next The man's influence on modern thought and practice is reflected in the character of his pupils Among the more famous were Astley Cooper, Abernethy, Physick, Thomson, Cline—who had the spirit of Hunter One of the first of these pupils was Edward Jenner, who became a resident pupil as early as 1770, when he was but 21, and lived two years in Hunter's house Less generally known is the fact that Hunter was the first to study the teeth in a scientific manner, and first to recommend complete removal of the pulp in filling them Orthodontic procedure in malocclusion was not unknown to him The Hunterian Museum with the thousands of specimens that he collected marks another side of his multifarious activities Thus one can better appreciate Stephen Paget's estimate of John Hunter The whole output of his working life, he wrote is fourfold—literary, surgical, anatomic, physiologic and experimental, but the multiplication together of these factors does not give the whole result of his work He brought surgery into closer touch with science Contrast him with Ambroise Pare, a surgeon in some ways like him, shrewd, observant, ahead of his age, the achievements of Pare, side by side with those of Hunter are like child's play in comparison with the serious affairs of men, Pare advanced the art of surgery but Hunter taught the science of it

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[1] Introduction to Paget Stephen John Hunter New York Longmans Green & Co 1898

PROPRIETARY PREPARATIONS AND PROPRIETARY NAMES

The rule of the Council on Pharmacy and Chemistry of the American Medical Association provides that, when a proprietary substance is admitted to the U S Pharmacopeia, it will be retained in New and Nonofficial Remedies only if the official name is given prominence on the labels and in the circulars and advertisements of such articles The justice of this rule of the Council concerning the recognition of proprietary names cannot be questioned In consideration of the benefits that may come from a discovery of a therapeutic agent, the Council concedes to the person or firm which, by right of the discovery, controls such a product the right to name it The name selected must not be therapeutically suggestive or otherwise subversive of scientific pharmacy If any product which, by reason of the absence or lapse of patent rights or for other reasons, is open to manufacture by more than one firm, the Council reserves the right to select a common name and to insist on this name, permitting the firm, however, to append its identifying mark These actions are in the interest of scientific medicine and of medical progress For instance, few physicians realize perhaps the resemblances that exist between argyn, argyrol, cargentos, silvol, solargentum and vargol Obviously, it is important for the general practitioner to know that these things are essentially the same, that they accomplish essentially the same things, that they are used for essentially the same purposes In Useful Drugs, published under the auspices of the Council, all of these preparations are included under the heading Argento-Proteinum Mite, or mild silver-protein They differ slightly in composition, but are essentially equivalent therapeutically Elsewhere in this issue (page 849) appears an extended report by the Council on Pharmacy and Chemistry of its action in omitting argyrol from listing in New and Nonofficial Remedies The history of this remedy is another example of the manner in which clinical evidence, none too carefully obtained, may boost a new remedy into popularity beyond its due The cultist leader who has once accumulated a vast number of followers, even though exposed and himself convinced of his folly, does not recede from his views The promoter of a proprietary preparation, riding on the crest of a wave of popularity, is seldom willing to come down to the level of the quiet sea when the storm subsides The Council has examined calmly and dispassionately the therapeutic claims made for argyrol and has been unable to find evidence for some claims which it terms essentially misleading Furthermore, the manufacturer is apparently unwilling to adopt the Pharmacopeia synonym for it The insistence on this synonym is important that physicians may fully comprehend the nature of the substance that they are using The first duty of any one working in the field of medicine, be it investigator, teacher, physician or manufacturer, is to the public that is being served This policy has been fundamental in compelling the present action of the Council on Pharmacy and Chemistry in relation to argyrol

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Association News

ANNUAL CONGRESS ON MEDICAL EDUCATION, MEDICAL LICENSURE AND HOSPITALS

Twenty Fourth Annual Meeting, held in Chicago Feb 6 7 and 8 1928

(Continued from page 776)

COUNCIL ON MEDICAL EDUCATION AND HOSPITALS

February 7—Morning

Survey of the Grading Committee

Mrs M A Burgess, New York We have been engaged during the past year in trying to find out what the true facts are about the supply and demand of nursing service We have reports in the office now from a little more than 35 000 nurses and more than 28,000 physicians We have some detailed reports from more than 1,500 hospitals We have not been so fortunate in getting returns from patients, but we have well over 2,000 already, and more patient, nurse and medical reports are coming in every day Then, in addition of course, we have a great many smaller groups of reports from nursing registries, for example, or from public health organizations

There seem to be four things which I think the Grading Committee a few months from now will be in position to state publicly The first is that the nursing profession needs help in cleaning house, and that means not only getting rid of some of the frankly undesirable nurses (there might be nurse practice acts, for example), but also in utilizing the ones who just now are not very valuable, giving them work they really can do, and helping them to be thoroughly worth while members of the profession There is a great body of worth-while women who could be valuable if they had just a little helpful leadership I think that problem is one which the nursing profession must face frankly The first problem is to clean house, the second is to put up the bars so that undesirable material cannot enter, the third is to keep track of what their own workers are doing, and help them so that each nurse can be doing the worth-while things which she might do if she had leadership, the fourth is to provide a far more flexible type of service than has ever yet been provided

I should be sorry if you went away with the feeling that I am inclined to think that many nurses are bad ones I did not know the nursing profession before I entered it It was a brand-new group to me I am much impressed with the quality and character of the women who form the backbone of the profession I like them immensely personally, I have a great admiration for them, and I am perfectly confident that if they are given a reasonable amount of help and understanding they will be able to do the things which so thoroughly need doing in their own profession They are very able, they are beginning to see the difficulties, many of them have seen them for a long while, and I think that the changes, especially the giving of a flexible nursing service, will come in the near future if they can get help

I should like to close this talk with the suggestion that if the doctor will take ten minutes he may make a real contribution toward solving an extremely difficult problem

February 7—Afternoon

The Educational Value of Autopsies

Dr Harvey H Bevis, Detroit Karsner states that an autopsy is a postmortem examination of the body to determine the pathologic processes present in their relationship to the clinical phenomena and history, their interest for the surviving relatives their importance to the community as a whole, and their value in the study of the cause, processes and nature of the disease

Postmortem examinations are widely recognized as a means of advancing our knowledge of medicine and are necessary adjuncts to the completeness of the case study It is here that we are afforded our opportunities of studying the earliest manifestations of disease, particularly in persons presumably healthy but killed by accident There is also the normal appearance of various organs and tissues necessary to a recognition of mortal processes or slight variations from health Anomalies may be found in study, anatomy reviewed, results of operative procedure noted and even surgical dexterity can be acquired by performing surgical operations in selected cases where no visible disfigurement of the body is entailed The medical student profits by the chastening influence of the autopsy room, witnessing as is inevitable, the mistakes of his elders, with an occasional diagnostic triumph He obtains an objective, first-hand knowledge of the morbid processes caused by disease Without this a rational conception of the nature and course of disease cannot be acquired He is able to recognize the etiologic range of variation in different organs and tissues and acquires an anatomic picture which he correlates with his physical observations Medical research, of necessity, depends on the autopsy for its disclosures and stimulative effect Conditions observed at postmortem examinations suggesting definite problems or methods of attack are continually opening the doors into fascinating realms of medical romance and when entered discoveries may result in inestimable value to humanity It is important, and should be of interest to the family to know the cause of death

The community profits by the increased efficiency afforded its medical men at autopsy The necropsy records furnish the only means of correcting the now unreliable vital statistics The hospital and particularly the teaching institutions where the autopsy is a matter of routine rather than a rarity show an increased efficiency and improved morale The more modern clinical-pathologic conference is a valuable substitute The procedure that we have adopted at the Detroit Receiving Hospital, which is the main teaching unit of the Detroit College of Medicine and Surgery differs little from the pathologic conferences held elsewhere Mimeographed copies of an abstract of the case history physical examination and laboratory observations are distributed Copies of these are mailed to the main discussers a few days previous to the conference After the clinicians have presented their impressions and before the pathologist reviews the case the pathologic specimens are passed round as unknown Then follows the pathologic report, the discussion by the pathologist, and a screen demonstration of the microscopic picture of the important lesions These conferences are attended by the various members of both the school and hospital staffs as well as by the medical students

The Autopsy from the Standpoint of the Medical Staff and the Hospital Administration

Dr Christopher G Parnall, Rochester, N Y The percentage of autopsies is an index both of the character of the work of the medical staff and, as has been pointed out by Dr Christian, an indication of the desirability of a hospital for intern training The generally low percentage of autopsies in American hospitals indicates that they are not realizing their best possibilities as medical institutions If the autopsy is important as an indicator of the character of the medical work, the inference is that more emphasis should be placed on medical administration The ideal administrator is a medical director who retains the point of view of the medical practitioner A low percentage of autopsies is a reflection on both the administration and the medical staff Medical students should be better instructed in the nature of hospital functions and organization Medical staffs should assume more interest in determining hospital policies Medical service in a hospital is the very object of its existence and is the chief concern of the administration In a modern hospital the administration is expected to require high standards of medical service and the staff has a right to expect active cooperation from the administration in maintaining an atmosphere of scientific interest and a tradition of good professional service

The employment of competent and experienced chief resident physicians should be more general in this country The chief resident physician should be an administrative supervisor of all the medical work in the hospital, including the responsibility for the obtaining of autopsies An experienced pathologist is necessary if full use is to be made of the autopsy when obtained Proper facilities, including a suitable postmortem room, must be maintained There must be an organized method, free from friction, for obtaining permission for autopsies and expediting their performance In all hospitals the ideal should be an autopsy in the case of every institutional death whether occurring in ward or in private service Medical house officers are to be encouraged to obtain permission for postmortems and their efforts recognized There should be a stigma attached to the report of a death without an autopsy The autopsy furnishes material for scientific investigation into the cause diagnosis and treatment of disease While it discloses mistakes, it also justifies diagnostic conclusions and therapeutic measures The physician of high standing has nothing to conceal The general use of autopsies contributes to the scientific atmosphere of the hospital, it inspires humility and encourages honesty The fullest use should be made of the autopsy for the benefit of the physician, the hospital, the family and the community

The hospital might well provide for the performance of autopsies in cases of death in the practice of staff physicians outside the hospital as a convenience and encouragement to the staff and as a means of helping in educating the public to the value of the autopsy When the public understands its value, there will be no opposition to the postmortem examination The laws relating to postmortem examinations should be liberalized Permission for autopsy should not be a legal requirement A death certificate should not be issued until the cause of death is established or corroborated by autopsy

Circumstances that Influence the Obtaining of Necropsies

Dr Elexius T Bell, Minneapolis This paper will be published in The Journal

The Minimum Procedure That May Justly Be Referred to as an Autopsy

Frederick C Smith, Marion, Ohio There is no problem relating to medical educational standards of greater importance than that of determining what minimum procedure should be regarded as an autopsy The Council, having adopted a standard as to the number or percentage of autopsies required of hospitals training interns, seeks now to determine a standard as to their quality A solution to this question supposes a thorough understanding of the autopsy We must know what it has done for medical science in the past, what it can do in the present to make us better physicians, and what it is likely to do for future medicine It comprehends a knowledge of the antemortem phenomena of disease and of the pathologic changes that may be found post mortem Neither the clinical manifestations of disease nor the anatomic changes found after death can be understood without the autopsy And the false conception which prevails generally among physicians that the problems of medicine can be understood by studying the results of past autopsies contributes largely to inferior medical knowledge

Both the positive and the negative value of the autopsy as an educational factor in the present must be understood Percentage and quality of autopsies determine the standards of medical education Of the two, quality is the more important Therefore, the standard of standards of medical education is the minimum procedure that may justly be referred to as an autopsy Essential to a properly conducted autopsy is a complete clinical record of the case Much of the value of an examination may be lost without this Both major cavities must be opened and all viscera and parts macroscopically examined as a routine Supplemental examinations must be made of parts found diseased A microscopic examination must be made of all parts found diseased macroscopically or which showed clinical evidence of disease Whenever clinical evidence showed central nervous system involvement the brain and spinal cord must be examined Likewise with the sinuses In surgical deaths special attention must be given to emboli thrombosis and phlebitis and bleeding In malignant conditions the primary seat must be determined and metastases traced When clinical evidence of thyroid disease or of disease conditions of bone exists, the respective parts demand examination Bacteriologic and serologic examinations are to be made whenever they will yield information The minimum procedure is concluded when all anatomic changes found post mortem are coordinated with the clinical data

DISCUSSION ON PAPERS OF DRS BEMIS PARNALL, BELL AND SMITH

Dr Howard T Karsner, Washington, D C It is a duty to push ahead the applied science idea, and this is a program for all medicine rather than for the pathologists only The program can be productive only if there is a healthy and hearty spirit of cooperation and mutual confidence The clinician with ex cathedra doctrines and the pathologist with the superiority complex have no place in the scheme unless they reform The thoughtful devotee of medicine needs no lecture on the educational value of the autopsy It is essential that the laity be informed, and, indeed, subjected to sane well directed propaganda We, who have the evidence, must present it repeatedly and convincingly Our own conviction must be supported by our actions Unless we ourselves are willing to be the subjects of what we ask of others, we stand indicted of insincerity and we cannot win any advance whether the true bill leads to acquittal or not The fact that the autopsy is a scientific inquiry is paramount Any procedure which has not this feature is not to be regarded as an autopsy Fundamentally, any restriction of exploration which excludes this feature also excludes its designation as an autopsy The law, however, may regard any postmortem exploration as an autopsy and we cannot defend a lawsuit by resort to academic technicality Candor compels me to say that the least that can reasonably be regarded as an autopsy is a complete examination of the thorax and the abdomen To the trained pathologist, that is common sense If statistics must be compiled, and certainly they have a genuine value, anything less than the procedure just mentioned should be tabulated and indexed as a partial autopsy Certain European countries assume that an autopsy will be performed unless specifically forbidden by the relatives, whereas our states assume that an autopsy will not be performed unless specifically sanctioned by the relatives Until we can alter this conception in our states, we shall face difficulties Therefore our principal activity must be directed, through education and if need be propaganda, toward the objective of completely inverting an established point of view There is no question of the propriety of this objective, but in order ultimately to attain it we must have solidarity among ourselves The greatest possible number of all the physicians in the country must realize with sympathy and concord that the effect is right Naturally time will be consumed in the project In the first place our criticism of the statutes is general rather than specific because we have not available a compilation of the laws of the various states concerning the matter Fruitful attention has been given the topic of medicolegal autopsies by a committee of the division of medical sciences of the National Research Council which has made an enlightening survey but the civil autopsy has not been covered in a comprehensive manner In order for us to have a definite point of departure, we must have an examination of the statutes and court decisions in the various states With this information it should be possible to make recommendations for change

Dr H E Robertson, Rochester, Minn The clinician is the keynote and he is the man who is responsible not only for our getting the postmortems that we do get but for our not getting the postmortems that we do not get In the past, a good many clinicians wanted to bury their mistakes They are a disappearing factor Furthermore the clinician has been slaughtered many times by the pathologist in order to make a Roman holiday for students and for his confreres I must say he has taken it in mighty good part I do not understand why some of us pathologists were not shot long ago This sort of attitude of the pathologist has been changed somewhat Many of them have acquired a little good sense The doctor himself does not want a postmortem done on his relatives nor does the nurse or the undertaker because they remember what an awful exhibition many autopsies have proved to be In the past we have not always conducted our postmortems as we would like to have them conducted on our own relatives The decorum of the postmortem room has not always been one of respect or thoughtfulness Here is a real reform that can be made and this reform must begin with the pathologist Let him insist on and obtain the proper spirit of reverence in the postmortem room

Dr A C Abbott Philadelphia While I was a student in the medical school a patient with a distended abdomen was brought into the clinic and presented as a case of ascites incident on cirrhosis of the liver Our teacher gave us an admirable and exhaustive clinic on those conditions and at the end of the hour most of us thought we knew about all that was worth knowing of that pathologic condition of the liver and its consequences On the afternoon following the clinic, word reached us that the patient who had been exhibited in the morning had died A classmate and myself decided we should like to see just what a cirrhotic liver looked like, so we called on the family and received permission to examine the body postmortem There was no evidence of a cirrhotic condition of the liver but instead there was widespread peritoneal miliary tuberculosis I do not cite this experience in criticism of our teacher for he was an able clinician and a man of great erudition but rather to emphasize the incalculable importance of seeing things objectively as they are devoid of all speculative considerations

Dr A S Begg Boston It is an embarrassing thing for an anatomist to try to use material that the pathologist is through with, but we try to cooperate We have an arrangement in my section of the country whereby we report back to certain institutions which supply us with material just what we find in the dissecting room We also have an arrangement so that we can call on the pathologist to demonstrate interesting material as we find it in the dissecting room For example, last year we had three stages in the development of aneurysm of the aorta on three subjects in the dissecting room We believe that in our anatomy department we can do a little in the teaching of pathology even in the beginning of the medical student s course

Dr B M Randolph, Washington, D C I am a teacher of clinical medicine and have been greatly interested in trying to impress the importance of the autopsy on clinicians with whom we come in contact I quite agree that the major difficulty in procuring autopsies is a lack of cooperation from the attending physician We get autopsies on largely over 50 per cent, some months 100 per cent of the patients who die in our wards under our own staff The private patients who come to the hospital are the ones who pull our average down That is owing to the fact that there is a large number of physicians who have the privilege of attending private patients in the hospital who do not take any particular interest in autopsies We have a continually increasing percentage of private patients on whom we are getting autopsies, and have a gradually increasing group of medical men who bring patients to the hospital who are taking more trouble to help us to get autopsies on the patients who die in the hospital There is one factor in the future of this matter, namely the way students are taught at the bedside of the patient, that is abandoning, to a great extent, accepted nomenclature and trying to impress on them a visualization in the cases they study of the pathologic condition present, to get them to think of the lesions, not labeling them with names merely, but thinking of them in terms of the pathologic observations and in the parallel study of pathologic specimens which are obtained from the museum I think that is one factor in the education of the future physician that will give him a more scientific outlook

Dr A A Hayden, Chicago I am an otolaryngologist Ear men recently have become interested in postmortems, owing to the fact that the American Otological Society has been given a considerable sum of money for the study of otosclerosis Among the first and principal things that this committee has in mind is to secure a number of ears that have had the hearing tests carefully made and the personal histories of the patients carefully compiled, so that the pathologic observations will be carefully correlated with the life and the family history of the individual I was present recently at a meeting of the Chicago chapter of the American League for the Hard of Hearing, attended by 200 or 300 persons, all more or less deaf, some of them very hard of hearing I was afraid I admit, to get up and ask these people to will this committee their ears, but in talking, after the meeting, with a number of these unfortunate persons, most of whom were able to read my lips without difficulty, I was surprised to find the favorable reception that the proposition that I was afraid to make to them publicly received privately

As one who has charge of interns in a fairly large hospital in this city, I want to say amen to everything that Dr Robertson said about the decorum or perhaps the lack of decorum in the autopsy room All too frequently this room is located in the basement or next to a boiler or in some uncomfortable and undignified place

I think that perhaps I have even a better right to speak to you than some of the men who have addressed you, because in my own will it is written that my remains are to be subjected to a postmortem examination

I remember when my mother's body was opened, and my wife and I were present I was interested of course, in the results My wife was quite shocked at some of the things Dr Robertson has mentioned, and instead of making a convert to postmortem examinations out of her I feel that the opposite effect was obtained I believe that in many states at least, even though it is expressly stated in a person's will that it is his desire that a postmortem examination be made in the last analysis of things that is not mandatory on his people, on his family or on his executors

Something that has not been touched on which I think often stands against the obtaining of postmortems is the attitude of the coroner's physician The men in Chicago, of course, are called on to do a large number of postmortem examinations, and they get tired doing them Their tendency, then, is to pass the matter over lightly This is particularly true, it seems to me, the closer politics is related to the coroner's office There is a distinct relationship between the political coroner or the coroner who obtains his appointment as a coroner's physician through politics and the low percentage of autopsies that will be done by that man

The situation that Dr Bell has spoken of in Minneapolis is ideal, I should think We find that one of the great troubles with undertakers is that they say it is harder to embalm a body after it has been opened, but there is another formidable objection on their part, and it is an entirely economic one The undertaker likes to be notified, of course, as soon as the death occurs, and if he will tell you the truth he is not really sure of the funeral until he gets the remains in his own possession, in his own office One group of relatives may want another undertaker, and for that reason the delay that is incident on the performance of a postmortem is one of the things that they seriously object to

I was interested in Dr Bell's statement about the relatively few autopsies after 30 years of age, also the relatively high number of men that come to autopsy In a considerable number of years at our hospital I do not remember a single case of embarrassment from anything that has come out of the autopsy room

I think that a great deal can be done first along the line of educating the public as Dr Bell has said, but I think that perhaps the word "fashionable" is better than the word "education" I believe that if prominent citizens had autopsies on their bodies it would become popular For instance, if an autopsy had been held over the remains of the late President of the United States, a citizen of Dr Smith's city, the whole situation through the country would have been immensely easier I think that the hospital executives, that nurses, that physicians, can do a great service to this cause in more often arranging, as far as they can, for the postmortem examination of their own bodies

Dr I D Metzger, Pittsburgh I come before you as an administrative officer over hospitals As such, I want to express my appreciation to the Council for the request, demand in fact, which it makes that 10 per cent at least of patients who die at the hospital shall come to autopsy Our board in Pennsylvania has unanimously approved it The laity is not interested very much in any procedure which helps to educate the physician after he once has been licensed to practice medicine That is shown by the reaction against vivisection and by the fact that patients do not want to be charged for pathologic work done after an operation The doctor is handicapped when he goes to the friends of the patient who dies and says, I want to know a little more about this case It was an obscure one I should like to know more specifically relative to the disease" They will say, "Why didn't you speak of that before hand so that we might procure some one else who did know? Why did you not call in consultants who might have known?" The doctor himself is loath to speak about the matter

We have had several key men mentioned this afternoon For the key man in the professional activities of the hospital I like to take the pathologist Every hospital ought to have a full-time pathologist who is compensated in such a way as to make possible giving his full time Then the clinician who is in charge of the case may step aside and he who is recognized as being interested more especially in the professional side of the case will carry the case to the autopsy table and secure the results from it

Dr J P Simonds, Chicago The facilities of many hospitals are not adequate for satisfactory postmortem examinations, and it is sometimes almost impossible to perform one in as neat a fashion as is expected in a surgical operation, but of course much can be done to improve that procedure Many of the cute remarks that are made at autopsies and much of the smoking is done by clinicians who attend That much might be said in defense of the pathologist When interns and clinicians are shown that they can get something out of the autopsies, I think it will be relatively easy to get more of them Autopsies can be used to teach not only clinicians and interns but also medical students Our students begin attending autopsies when they begin the subject of pathology I have found that by going over the case soon after the autopsy, in the lecture room and pointing out the mistakes in diagnosis, pointing out the important pathologic conditions that were not noted clinically, and then connecting up the various points of associated pathologic changes, we have stimulated interest in those amateurs materially

For the juniors and seniors we have an elective course which is conducted somewhat in this fashion The clinical history, or a full summary of it, is mimeographed and to that is attached the anatomic diagnosis from the autopsy record These records are handed out to the students They come with their microscopes and substage lamps, we have a full discussion, frequently we have one or more clinicians present, we have a full discussion of the clinical phases of the case in question, and then after the diagnostic possibilities have been gone over we present the gross pathologic material After that has been examined we throw on the screen with a device that has come out fairly recently, a low-power magnification, about 10 diameters, I think it is, of the microscopic sections from that particular case, or at least from all of the organs which showed any essential pathologic changes While those low-power magnifications of the specific sections are on the screen, the students are looking at the corresponding sections under their microscopes with the substage lamps We attempt to have them do as much of it as they can, but juniors and seniors have forgotten much of their histopathology, and it is helpful to them to point out at least the important pathologic changes which can be shown with this low magnification and which they can see with the higher magnification under their own microscopes

Dr S H Boyer, Duluth, Minn We doctors, for all you may say, are still family physicians, we get close to people When Mrs Jones loses her husband and is left with her little children to take care of, it is a calamity She is grief stricken, and you doctors can't go to her and say "Mrs Jones, we want to make a postmortem examination on your husband' That is why the doctors don't ask for postmortem examinations, it is brutal, and they know it, everybody knows it The living bereaved don t want to see their dead mutilated But there is a way to approach these people, a good way a kindly way You may not do it personally but somebody else may do it for you Occasionally the undertaker will do it Somebody can approach them a mutual friend perhaps You may be called in finally and be able to explain the need and advantage of autopsy and so secure the desired permission You may say, "I have done everything that I could, I have tried to find out everything that may have ailed this patient, I have tried to determine the cause of the conditions observed, I have wanted to know what I could do to help There may be something here that I don't know about" You will be honest when you say there may be something there that you don't know about, that you would like to know about, and perhaps if you can find out what that thing is you sometime may be able to help another one of the same family, maybe some relative, maybe some friend or maybe a stranger You say you may be able to afford that help, you promise that you won t do anything that is hurtful to their sensibilities and that you will consider their feelings in all particulars Nine times out of ten they will feel that the sympathy of their family physician instead of being a false thing is a true thing, and that he is after all working in their interest and in the interest of humanity as a whole

Dr R C Buerki, Madison, Wis I thought it might be of interest to you to know that at the University of Wisconsin, in spite of very limited physical facilities, our autopsy room is in the basement of another building not attached to the hospital Our pathologic staff of the university is undermanned, and as a result we cannot always get pathologists to do the post mortems In spite of that we secure about 30 per cent of our autopsies without any real drives on the part of the staff to get them but rather through the intelligent cooperation of the interns who meet the patient when he comes to the hospital as a patient before he is dead, and meet the family We put the responsibility of getting the autopsies on the interns, we put the responsibility of arranging for the disposal of the remains all up to the interns so that they feel keenly their responsibility The clinical staff does not enter into it except with cooperation, which is indirect The clinical staff never enters the situation, rarely does the resident staff, it is purely an intern proposition

(To be continued)

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest such as relate to society activities new hospitals, education public health etc.)

ALABAMA

Society News—Walker County Medical Society gave a banquet, recently, at the First Christian Church, Jasper, in honor of Dr Joseph A Goodwin, Jasper, the only surviving charter member of the society Dr George S Gilder, Carbon Hill, president of the society, presided and among the speakers were Drs William M Cunningham, Corona, Hugh W Stephenson, Oakman, and Howard J Sankey, Nauvoo

CALIFORNIA

Scabies Closes Schools—The Mill Valley schools in Marin County were closed for ten days March 2, it is reported, to check the rapid spread of scabies among the 600 school children

The Lowest Typhoid Record—There were 683 cases of typhoid reported during 1927 in California as against 1 023 in 1926 This is the smallest annual number of cases ever reported in California

Lepers Sent to Carville—Since 1922, when the National Leprosarium at Carville, La was opened, California has sent seventy-one lepers to that institution, nearly all of whom were either foreign born or residents of other states They are transported from California to Carville twice each year, in May and December, and the number transported in 1927 was twelve

Hospital News—The Eye and Ear Hospital of Los Angeles has moved into a new building at 500 South Lucas Avenue The hospital maintains a charity outpatient clinic to which the staff gives its time gratuitously and where patients are carefully investigated by a social service department so that only those unable to pay are admitted The new building is so arranged that its capacity can be increased if necessary by additions The hospital was founded in 1922

Society News—The Los Angeles Surgical Society held a symposium, March 9 on the prevention and relief of postoperative complications, Drs George Dock and Foster K Collins speaking on gastro-intestinal ileus and peritonitis, Joseph K Swindt on wound infection Madison J Keeney on respiration Arthur Stanley Granger and Robert W Langley on circulation, Robert V Day on urologic complications and Verne R Mason Roy E Fallas and George G Hunter on toxemias Pathologic specimens were presented by Drs Walter V Brem and Simon H Jesberg

Smallpox Situation Improves—The unenviable smallpox record of California showed a marked improvement in 1927 The smallest number of cases of smallpox in the state since 1919 had been 2,002 until 1927, when the number dropped to 935, in 1924 there were 9,445 cases The largest number of deaths during the period was 236 in 1926 There were only five deaths in 1927, the smallest number of cases reported in California in the last ten years was in 1927

Licenses Revoked and Suspended—At the regular meeting of the state board of medical examination Los Angeles March 1, the licenses of the following physicians were revoked

Dr John Elmer Baker Los Angeles state narcotic violation
Dr James A Hadley Eureka illegal operation
Dr Donald Eugene Harris Los Angeles alleged use of fictitious name
Dr George Carl H McPheeters Fresno revealing professional secrets
Dr Frank B Moran Dallas Texas federal narcotic violation
Dr Milton A Nelms Walla Walla Wash (now inmate of McNeil Island Penitentiary) federal narcotic violation

The board placed on five years probation Dr Thomas J Randall, Los Angeles, for illegal advertising and Dr Henry C Wallace, Fresno for violation of the federal narcotic law Dr Charles A Bailey was placed on probation to April 1 1929, for state narcotic violation The right to practice of Dr John Jacob Richstein, Los Angeles, was suspended for one year for violation of his terms of probation The license of a naturopath by the name of J F Balzer, who is an inmate of San Quentin State Prison, was revoked on account of conviction of conspiracy to commit murder

DISTRICT OF COLUMBIA

Nurse Awarded Medal for Saving Patient—The ladies' board of the Emergency Hospital, Washington, has awarded a gold medal to Mabel Clark, a recent graduate from the training school for nurses at the hospital, for saving the life of a delirious patient Columbus Bronson, colored, aged 39, was admitted to a room on an upper floor of the hospital last July He became delirious, and as Miss Clark entered the room was about to jump from the window She grabbed him by the foot, and called for help The patient was rescued and left the hospital in a few days in good condition

Neck "Twisted"—Patient Dies—Physical Therapeutist Held—Washington newspapers have much to say about the death of a woman, aged 23, in the office of Louis W Hoffman physical therapeutist, who had given her an "adjustment' shortly before she died A coroner s jury held Hoffman for action of the grand jury At the inquest, a friend who accompanied the patient to Hoffman's office testified that she went there for treatment for headache, and that after treating her spine with an electric light Hoffman gave some twists to her neck In about fifteen minutes, it was said, the patient became pale, and a doctor of medicine was called On arrival, he pronounced the patient dead Hoffman said in his own defense that he gave the girl the customary treatment used by chiropractors in cases of severe headache An autopsy was performed by Dr Andrew M MacDonald, who is said to have testified that death was due to a dislocation of the cervical vertebrae Hoffman studied chiropractic in the city of Washington

ILLINOIS

Health Promotion Week—Every county in Illinois is requested by the state department of health to observe the program for health promotion week, the fifty-two southern counties in the state during the week of April 1-7, and the fifty northern counties during the week of April 22-28 Special health topics will be stressed each day Physicians, clubs, churches and other organizations are requested to cooperate in bringing these subjects before the public

Society News—Dr Alexander E Horwitz, St Louis, addressed the Belleville branch of St Clair County Medical Society, February 1, on Symptoms and Treatment of Flatfoot and Back Lesions"——Dr Wilson R Abbott, Chicago addressed the Livingston County Medical Society March 1 at Pontiac, on Early Diagnosis of Systemic Tuberculosis'——Dr Jacob J Singer St Louis, guest of honor at a dinner Quincy, March 12, addressed the Adams County Medical Society on "Newer Methods in Chest Diagnosis", the program at the February 13 meeting of the society was furnished by the Marion County Medical Society of Missouri the speakers being Drs Howard B Goodrich Hannibal, on Prevention of Puerperal Infection," and Francis E Sultzman, Hannibal, 'Throat and Upper Respiratory Infections"——The Green County Medical Society was addressed, March 9, by Dr Harold Swanberg, Quincy, on 'Radium Therapy with Special Reference to Uterine Hemorrhage," and Dr Henry A Chapin, Jackson, "X-Ray in Diagnosis and Treatment"

Chicago

Special Birth Control Clinic—The medical advisory board of the Illinois Birth Control League has advised the establishment of a special birth control clinic for the treatment by qualified physicians of all cases referred for therapeutic reasons by members of the medical profession This work will be carried on by the medical staff of the league at its office, 203 North Wabash Avenue, Thursdays, from 2 30 to 4 30, appointments may be made with the secretary by telephone, Central 1037

Rongetti Sentenced—Judge Comerford's Statement—Following conviction by a jury for the murder by abortion of Loretta Enders, Dr Amante Rongetti, proprietor of the Ashland Boulevard Hospital was sentenced, March 9 to die in the electric chair, April 13 He is said to be the first person sentenced to capital punishment in Cook County for a criminal operation, as well as the first in the county to be sentenced to die in the electric chair Judge Comerford, in whose court the case was tried, read the following statement in denying a motion for a new trial

> The court gave counsel every opportunity to examine and determine the qualification and fitness of the jurors The jury that tried the defendant was tendered to the court as acceptable and qualified
>
> Proof was made on trial first that the defendant performed a criminal abortion on the deceased and left this unhappy 19 year-old girl to die because she did not have any money and had not paid her bill second that the defendant refused to perform an indicated operation after the abortion had been performed and after the symptoms of peritonitis had set in and refused to send her to another hospital where she might have had such an operation performed, third that the defendant signed a death certificate setting forth rheumatic endocarditis as the primary cause of death, and nephritis as the secondary cause of death the death certificate indicating that the information and history came from the father of the deceased who has been dead for about eighteen years fourth that the defendant undertook to pay the funeral expenses of the deceased up to the sum of $400 fifth that in her dying hours the defendant turned a deaf ear to the pleadings of a heart broken old mother that a priest of God might be with her daughter at the end
>
> No one took the witness stand to challenge dispute or deny these terrible truths not one word of testimony was offered by the defense in answer to this proof
>
> Having criminally robbed this young girl of her life her memory was assailed by filthy and false insinuations charging her with two loathsome diseases
>
> As an act of justice to her memory the court points to the testimony of Drs Epstein LeCount McNally, Culbertson Sonnenschein and Tonney
>
> These doctors answered suspicion with science They proved conclusively and completely that this murdered mother was clean The jury found the defendant guilty of a most revolting and brutal murder and fixed the punishment at death The defendant was accorded every right and protection of the law
>
> The inquiry by the court into the alleged intimidation of witnesses was outside the presence of the jury The court would have been guilty of a definite dereliction of duty if the court had not acted outside of the presence of the jury to determine grave charges made concerning methods and practice that threatened justice in its own house
>
> The defendant had a fair trial by a jury of his own choosing
>
> Therefore the court overrules the motion for a new trial

KENTUCKY

Bills Introduced—House bill 620 provides an entire new workmen's compensation law The law provides for medical surgical and hospital treatment for injured employees House bill 311 provides for the sterilization of inmates of state institutions

LOUISIANA

Dr Castellani Has Been Knighted—In recognition of his distinguished service to the British government in the field of tropical medicine, the honor of knighthood has been conferred on Dr Aldo Castellani, professor and director of the department of tropical medicine, Tulane University of Louisiana School of Medicine, New Orleans Dr Castellani was born in Florence, Italy, but spent most of his childhood in England In 1902, working in Germany under Professor Kruse he discovered the "absorption test' for the differentiation of closely allied organisms In 1903, he was invited by the British government to conduct research on sleeping sickness in Africa, where he discovered the cause of the disease to be a trypanosome The British government called him to be director of the Institute of Bacteriology at Colombo, Ceylon where he became head of the clinic of tropical diseases and devoted ten years to research Dr Castellani discovered that *Spirochaeta pertenuis* is the causative agent of yaws, a common disease in many tropical countries In recent years he has devoted much time to the investigation of fungi and fungal diseases and of symbiosis He has devised mycologic methods for the identification of various sugars and has described a symbiotic fermentation phenomenon which is used in the differentiation of various bacteria He is the joint author with Dr Albert J Chalmers of the well known "Manual of Tropical Medicine" Dr Castellani served with the Italian army during the World War, then returned to London as director of tropical medicine and physician in the Ross Tropical Institute and Hospital, and lecturer in the London School of Tropical Medicine He accepted the chair of tropical medicine at Tulane University in 1925

MAINE

Personal—Governor Brewster has nominated Dr Fred E Wheet, Westbrook, as medical examiner for Cumberland County to succeed Dr Frank Leslie Ferren——Dr James W Loughlin has been appointed health officer of the third district with headquarters at Newcastle, succeeding Dr George E Parsons, who has resigned to enter practice at Millinocket——Mr Walter D Thurber has resigned on account of ill health as executive secretary of the Maine Public Health Association after about seven years' service, and has moved to California

MARYLAND

Hospital News—The Emergency Hospital, Annapolis was practically destroyed by fire recently——The Sheppard and Enoch Pratt Hospital, Towson, which is a psychiatric institution, has completed plans to construct a seventy-five bed reception hospital and diagnostic clinic This will give the institution a total capacity of about 220 beds The hospital was founded seventy-five years ago by Moses Sheppard, who left $600 000 for its support Later, Enoch Pratt gave $1,500,000

Personal—Dr John R Devereaux, Chevy Chase, has been appointed medical director for the Catholic Near East Welfare Association, he will go to Europe to make a survey of public health conditions in the Near East, and will recommend such relief measures as the association may be able to offer——Dr Paul Preble has been loaned by the U S Public Health Service to the Maryland State Department of Health to take charge of the bureau of vital statistics pending the selection of a physician to that position, Dr Preble will continue his work at the Johns Hopkins School of Hygiene and Public Health while with the state department of health——Dr Lewis R Thompson, U S Public Health Service, delivered a De Lamar lecture on "Industrial Pneumonoconioses," February 7, at the School of Hygiene and Public Health, Johns Hopkins University, Baltimore——Dr Howard A Kelly, who celebrated his seventieth birthday, February 20, expects to take part in a geologic expedition to Utah in the spring

Society News—Dr John C Hemmeter, emeritus professor of clinical medicine, University of Maryland School of Medicine and the College of Physicians and Surgeons, Baltimore, addressed the History of Ideas Club, Johns Hopkins University, February 14, at Gilman Hall, on "The Prerequisites to a Philosophy of History"——Dr Eugene H Hayward addressed the Baltimore County Medical Association, February 15 on "Diagnosis of Acute Abdominal Conditions," and Dr Thomas K Galvin on "Diagnosis of Acute Pelvic Conditions"——Dr Downey L Harris, St Louis, Mo lectured on rabies at the Johns Hopkins University School of Hygiene and Public Health, February 21——Lieut Col Fielding H Garrison, medical corps U S Army, addressed the Book and Journal Club of the Medical and Chirurgical Faculty of Maryland March 8 on "Present Sources and Future Prospects of Medical Biography," and Dr Charles W Burr, Philadelphia on "Dr James Dictionary Maker and Inventor of James Powder"——Dr Percy W Cobb, Nela Park, Cleveland, gave a public lecture on "Use of Artificial Light," March 6 at Johns Hopkins University School of Hygiene and Public Health——Dr John R Oliver, Baltimore, will give a series of lectures on the history of medicine, Thursday afternoons, during March, April and May, at 5 p m, at the University of Maryland

MASSACHUSETTS

Bill Introduced—House bill 1029 provides that all persons handling foods or drugs for sale to the public must be examined to ascertain whether they have any contagious, infectious or other disease which may be injurious to the public

Society News—George Barger, professor of chemistry, University of Edinburgh, lectured at the Medical School of Harvard University, March 9, on "Thyroxine and the Thyroid Gland"——The Trudeau Society of Boston will meet, March 21, at 8 15 p m

History of Medical Journalism—The first number of the *New England Journal of Medicine,* successor to the *Boston Medical and Surgical Journal,* has an illustrated article by Dr Joseph Garland, giving a brief summary of its history There is also an article on "A Century of Surgery" by Dr David Cheever, describing the pioneer surgical work done in New England, an article on the beginnings and development of the *Boston Medical and Surgical Journal* by Dr Edward C Streeter, and an address by Dr Morris Fishbein, Chicago, on "Medical Journalism and the Boston Medical and Surgical Journal," delivered at the recent celebration of its centennial

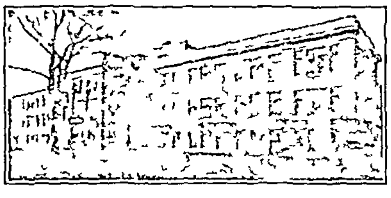
MINNESOTA

Personal—The late Dr George G Eitel bequeathed to the University of Minnesota $80 000 to provide a fund for needy medical students and a loan scholarship——Dr Hannibal H Kimball, Minneapolis, will give a suitable reward for the return of his lost album of early European surgeons, which has been freely loaned to libraries, clinics and individuals

Health at Duluth—Telegraphic reports to the U S Department of Commerce from sixty-eight cities with a total population of about 30 million, for the week ending March 3, indicate that the lowest mortality rate (8 5) was for Duluth, and that the mortality rate for the group of cities was 14 5 The mortality rate for Duluth for the corresponding week last year was 7 3 and for the group of cities, 13 7

Boyd T Williams Arrested and Fined—The first case brought about by the new basic science bill is said to be that of Boyd T Williams, Minneapolis, who pleaded guilty, February 21, to a charge of practicing without a license and was fined $100 Prosecution of this case under the new act, it is said, will be followed by similar charges elsewhere in the state Violation of the act may be punished by a thousand dollar fine or a year's imprisonment Boyd T Williams has for some years conducted what is known as the "Williams Sanitarium" in Minneapolis Although Williams has announced in some of his printed matter that he "personally conducts the examination and treatment of all patients," he is not licensed to practice medicine in Minnesota According to state officials, he has been arrested at various times and fined The fines, however, have apparently been small On different occasions the State Board of Medical Examiners of Minnesota has appeared, in the person of its secretary before the Hennepin County grand jury in an attempt to get the Williams case into a court of record instead of the police court, but, so far as is known, no grand jury has ever brought an indictment against the man It is apparent, from information on file, that Williams uses caustic paste in the treatment of cancer

Banquet to Dr Taylor—The guest of honor at the annual banquet of the medical staff of Lymanhurst School, Minneapolis March 28 will be Dr Henry Longstreet Taylor, president this year of the National Tuberculosis Association Invitations have been extended to physicians, nurses and interested laymen including the governor of the state and the mayor of the city Dr Taylor has been engaged in antituberculosis work since 1893 He is said to have opened in 1905 the first permanent institution for the treatment of tuberculosis in Minnesota The Lymanhurst School is a public day school, operated jointly by the board of education and the board of public welfare for the children in whom a positive diagnosis of tuberculosis has been made They are given special diet a rest period and such other treatment as can be given in a day school There are no beds The staff includes specialists from every branch of medicine and the thirty six members of the staff serve voluntarily The school is under the immediate supervision of the city health commissioner The banquet honoring Dr Taylor will be under the auspices of the staff of the school, the Minnesota Trudeau Society and the state and county public health associations Among the speakers will be Drs Louis B Wilson, Rochester, and William A Evans, Chicago



The Lymanhurst school

MISSISSIPPI

Society News—Dr Van Buren Philpot, Houston, was elected president of the Tri-State Medical Association at Memphis Tenn, March 1——The Pearl River County Hospital, Poplarville, was completely destroyed, recently, by a boiler explosion

Bills Introduced—House bill 591 provides for the sterilization of inmates of state institutions for insane and feebleminded persons——Senate bill 132 provides for the licensing of chiropractors by the state board of health Senate bill 296 provides for a state board of examiners in chiropractic and regulates the practice of chiropractic Senate bill 244 provides for the repeal of the $10 occupational tax on dentists, physicians, etc

MISSOURI

The Hodgen Lecture—Dr Dean D Lewis professor of surgery, Johns Hopkins University School of Medicine, Baltimore, will deliver the Hodgen lecture, March 20 before the St Louis Medical Society on "Reconstruction Surgery" The students of medicine of St Louis University and Washington University are specially invited

Failures Among Students at Missouri—The registrar of the University of Missouri, Columbia, announced, February 18, that 331 students had failed at the close of the fall semester, January 21, to pass their required work Of these 156 were permanently eliminated from the university unless special dispensation is granted by the university authorities, the remaining 175 of those who failed were first offenders and were allowed to continue their studies on probation

Personal—Dr Ferdinand C Helwig has been appointed full-time pathologist to St Luke's Hospital Kansas City——Dr Edward H Skinner, Kansas City was presented with a desk chair by the Southwest Kansas City Clinical Society in appreciation of his work for the society, which he is said have originated——Dr Louis J Wolfort St Louis has been appointed to the Missouri Nurse Examiners Board by the governor to succeed the late Dr Edward W Saunders

Shriners' Hospitals for Crippled Children—At a meeting of the board of trustees of the Shriners' Hospitals for Crippled Children, St Louis, February 13, it was brought out that about $8,000,000 had been expended for the construction, equipment and operation of the ten permanent hospitals and five mobile units maintained by the Shriners, and that the St Louis hospital, the largest one in the chain, has the only research department The trustees authorized the expenditure of $200,000 for a nurses' home and training school adjacent to the St Louis hospital Dr Leroy C Abbott, St Louis, was elected president of the organization of chief surgeons of these hospitals

Society News—Dr Ralph R Wilson addressed the Bourbon County Medical Society, Fort Scott, Kan, on the "First Trimester of Pregnancy," and Dr Homer A Beal on "Mastoiditis in Infancy"——Dr Donald R Black addressed the Crawford County Medical Society, Girard, Kan, February 17, on "Anemia," and Dr James G Montgomery on "Diseases of the Spleen"——The Boone County Medical Society conducted a symposium at its March meeting on obstetrics its management and complications——Dr Thornton E Moore, Trenton, addressed the Grundy County Medical Society, recently, on 'Micrococcus Tetragenus Infection from Mouse Bite with Report of Case"——Dr Marsh Pitzman addressed the St Louis Medical Society, March 6, on "A Working Hypothesis as to the Cause and Prevention of Infantile Paralysis" Dr William Kerwin on 'Reliable Method for Control of Hemorrhage in Placenta Praevia," and Dr Francis L Reder on 'Incisional Hernia"

NEW JERSEY

Bills Introduced—House bill 193 would allow the use of drugs and surgery by osteopaths House bill 206 provides for court-appointed expert witnesses House bill 296 provides for the licensing, without examination, of blind persons who are graduates of a school of chiropractic House bill 429 provides that when a county physician is unable to determine the cause of death, he may, if he deems it necessary, order that a postmortem examination be performed

NEW YORK

Number of Midwives Decreases—During 1927, the number of licensed midwives in New York, exclusive of the metropolitan area, decreased from 375 to 320 Twelve new licenses were issued, six were refused licenses for 1928, three had their licenses held up for investigation, forty-three gave up their licenses or failed to renew them, fourteen moved out of the state, and seven died The number of births attended by midwives also decreased from 6974 in 1926 to 5,758 in 1927, according to the monthly reports of midwives According to *Health News* of the New York State Department of Health, five maternal deaths, eight infant deaths, one case of ophthalmia neonatorum, and three cases of puerperal septicemia were reported by midwives

Newly Discovered Typhoid Carriers—In upstate New York, exclusive of the state institutions, twenty-five newly discovered typhoid carriers were added to the list of the state department of health during 1927, making the total number on the list 155 Forty-seven cases of typhoid were traced to these carriers, eight carriers were male and seventeen female, their ages ranged from 21 to 66 One had typhoid as long ago as 1871, and four stated that they had never had typhoid It is interesting to note that the history of these newly discovered carriers, as given in *Health News*, shows that one was a school teacher and one a soda dispenser and dishwasher in a restaurant There were six cases among the patrons of this restaurant One was a housewife on a dairy farm No cases were traced to this patient The milk was sent to a condensed milk plant

Society News—A conference was held, January 11, by representatives of the state medical society, the state department of education and the deans of medical colleges to discuss the training of students to practice preventive medicine and especially to make periodic examinations of apparently well persons——A symposium on pneumonia was conducted by the Syracuse Academy of Medicine, February 21 Drs Oliver W H Mitchell speaking on 'Laboratory Aids in Pneumonia", Percival K Menzies, 'Postoperative Pneumonia", Mandell Shimberg "Traumatic Pneumonia," and Charles D Post, "Treatment of Pneumonia"——The Medical Society of the County of Nassau has undertaken publication of a monthly bulletin known as the *Nassau Medical News* for the purpose of establishing closer contact between the medical society and the people in the county——Dr Paul D White, Boston, addressed the Rochester Medical Association, Rochester, March 7, on 'Cardiovascular Observations Progress in the Last Decade"

New York City

Report of Dean—Dr Samuel A Brown, dean, University and Bellevue Hospital Medical College, in a report to the chancellor of New York University, stated that only 126 of the 528 applicants for admission to the medical college last fall could be admitted because of limitation of facilities In the last two years, all students entering the college for the first time either held a bachelor's degree or were entitled to one on completion of the first year of medicine Of the 104 members of last year's graduating class, each one had a hospital appointment by September Dean Brown stated that the dispensary of the medical school had 117,959 patients during the last year, 20,000 of whom came for the first time

Bronchoscopic Club Organized—Following a dinner at the Columbia University Club, February 21, the New York Bronchoscopic Club was organized with Drs Frank R Herriman, president, Henry H Forbes, vice president, and Westley Hunt, secretary The guest of honor, Dr Chevalier Jackson, Philadelphia, traced the growth of bronchoscopy from a pioneer movement to its present world-wide recognition in medical circles Bronchoscopic work in Europe was reviewed by Dr C Calatayud of the University of Madrid Dr Louis Gregory Cole, New York, exhibited pictures of massive collapse of the lung, which demonstrated the importance of cooperation among the specialists represented in the new organization—internists, thoracic surgeons, roentgenologists, pathologists and peroral endoscopists

Society News—The matter of changing the name of the Medical Society of the County of Kings to Medical Society of the County of Kings and Academy of Medicine of Brooklyn will be acted on at the March meeting——Dr John Guttman addressed the American Physical Society at Columbia University, February 25, on "Effect of an Interfering Tone on a Normal and a Deafened Ear"——The Queens County Medical Society has appointed a committee to appeal to Mayor Walker to authorize the establishment of a city hospital for the poor in Queens The chairman of the committee, Dr Edward J Buxbaum, stated that Queens should have a hospital of at least 250 beds, and that it was the only borough without a municipal hospital——Dr Sergius M Ingerman was elected president of the Russian Medical Society of New York at the annual meeting, February 22, and Dr Benjamin O Alpern, secretary

Births Attended by Midwives—The number of births in New York attended by midwives has gradually decreased since 1909, when more than 40 per cent of the births were attended by 3,131 midwives In 1926, apparently the last year for which the city health department has completed its compilation, 17 per cent of the births were attended by 1,297 midwives While the number of midwives has decreased, the average number of cases delivered by each has slightly increased In New York, in 1926, midwives attended 21,068 births Regulations governing the practice of midwifery have been made more stringent, and the unfit have been gradually eliminated During 1926 only one permit was revoked for infractions Midwives may deliver only normal cases They must call a physician for any untoward condition that arises during pregnancy The infrequency with which abnormal conditions such as sepsis and ophthalmia neonatorum are found in their practice indicates, the health commissioner states, their promptness in referring every case of this character to a physician

Physicians' Art Exhibit—The second annual physicians' art exhibit will be held at the New York Academy of Medicine during the first two weeks in April under the auspices of the New York Physicians' Art Club The superintendent of the academy will receive exhibits up to the third week in March A limit is placed this year on wall space for pictures, about 25 square feet being available for each individual As in last year's exhibit, paintings, etchings, pastels, sculpture, wood-carving and examples of industrial arts will be acceptable, provided they are original and were not shown last year No unframed pictures will be shown The exhibitor should attach to each separate piece a written label indicating his name and address and the name of the exhibit, duplicates of these labels should be mailed to the physicians' art exhibit committee, care, superintendent, New York Academy of Medicine, One Hundred and Third Street and Fifth Avenue There will be no jury of selection and no rejections except for lack of space

Organization Meeting—Anecdotes of the World War — Hospital Center number 6 will hold its first organization meeting, March 23, at the Army Building, 39 Whitehall Street, for the purpose of ascertaining the individual duties of the officers The hospital center is under the command of Col Joseph C DeVries, medical reserve, who requests members to come in uniform if convenient, but the announcement adds, "civics will not be frowned upon" Col Harlow Brooks, medical reserve, now assigned to the army medical school, Washington, D C, will speak on "Hospitalization in the Army Area," and Lieut Col Graeme M Hammond medical reserve, on "Psychosis and Neuropsychosis Observed in Conscription and Militia Divisions' Lieut J D Sullivan of the navy intelligence department will relate "Some Thrilling and Hair-Raising Anecdotes of the Late War' Credit for attendance will be noted on the records and, in accordance with regulations covering the reserve corps, will count toward promotion Others present will be the corps area surgeon, Col Albert E Truby, and his assistant, Major Ralph G DeVoe

PENNSYLVANIA

Special Meeting at Pittsburgh—The March 20 meeting of the Allegheny County Medical Society, Pittsburgh, will give a scientific program consisting of addresses by Drs Viola Z A Johnston on "Treatment of Skin Malignancy with Radium', Alexander R Hampsey "Paranasal Sinus Disease in Young Children,' and William E Hart, "Chronic Lesions of the Appendix as a Cause of Toxemia" At 9 15 p m, plans to bring to the attention of voters at the spring primaries the threat made by "the outlaw chiropractors association" against licensing standards, treatment of indigent patients in state-aided hospitals, public health regulations, and the entrance standards of universities, will be discussed Licensed physicians members of the women's auxiliary and others interested in hospital management and welfare work are invited to this meeting in Carnegie Lecture Hall on Forbes Street

Society News—Dr Howard B Erdman, Macungie, gave an illustrated lecture before the Lehigh County Medical Society, February 14, on diagnosis and treatment of diseases of the rectum——Dr Herbert H Holderman, Shenandoah, was awarded the honorary degree of master of science in surgery, February 18, by the council of the University of Pennsylvania——Dr Joseph H Barach, Pittsburgh, addressed the Washington County Medical Society, February 23, on "Essential Vascular Hypertension"——The Dauphin County Medical Society, Harrisburg held a symposium, February 7, on pharmacology and clinical application of cardiac drugs there were twelve members on the program, each limited to ten minutes discussion Dr Thomas Grier Miller, Philadelphia, gave an illustrated talk before the Harrisburg Academy of Medicine, February 21, on diagnostic data in gastric and duodenal ulcers——Drs Alexander Randall and Percy S Pelouze, Philadelphia, addressed the Pittsburgh Urological Association, March 12, on "Genesis, Morphology and Surgery in Hypertrophy of the Middle Lobe of the Prostate' and "Gonorrhea—in Fallacy and in Fact," respectively——The Pittsburgh Pediatric Society was addressed, March 16, by Drs Harvey M Watkins and Henry D Gaynor of the state school at Polk on mental and endocrine studies

Philadelphia

Society News—Dr Kellogg Speed, Chicago, addressed the Philadelphia Academy of Surgery, March 5, on "Unhappy Results in the Treatment of Fractures," and Dr Fraser B Gurd, Montreal, on "Treatment of Fractures Involving the Ankle Joint"——"Reminiscences of an Older Laryngologist" was the subject of an address before the Philadelphia Laryngological Society, March 6, by Dr D Bryson Delavan, New York

Tercentenary of Publication of Harvey's "De Motu Cordis"—The College of Physicians of Philadelphia has issued invitations to exercises commemorating the tercentenary of the publication of William Harvey's work "De Motu Cordis," in which he gives the first account of his discovery of the circulation of the blood At the exercises in the college building, Thursday evening, March 22 Sir Humphry Davy Rolleston will give the Mary Scott Newbold lecture on "Harvey's Predecessors and Contemporaries' The Nathan Lewis Hatfield lecture will be given by Prof John J R Macleod University of Toronto Faculty of Medicine, on "Harvey's Experiments on Circulation" There will be an inspection of the exhibition of Harveyana from the collection of the college of surgeons and other sources

SOUTH CAROLINA

Bill Introduced—House bill 1598 prohibits the sale of any preparation or mixture containing in excess of 20 per cent of alcohol, without a prescription from a licensed practicing physician, authorizing such sale

VIRGINIA

Bills Introduced—House T N 44 regulates the issuance of degrees and diplomas from any school teaching any branch of the healing art House bill 165 provides that when a physician examines a patient as to his sanity, he shall receive his fee whether or not such patient is found insane

GENERAL

Psychiatric Clinics for Children—The Directory of Psychiatric Clinics for Children in the United States is being revised and brought up to date An attempt is being made to include in the new directory every clinic in the United States offering a psychiatric service for children Any clinic maintaining such a service which has not received a questionnaire to be filled in regard to its work should communicate immediately with the division on community clinics, National Committee for Mental Hygiene, 370 Seventh Avenue, New York City

Negro Health Week—The fourteenth observance of National Negro Health Week will be April 1-8, when state and city health departments, volunteer organizations and numerous other agencies will cooperate with the U S Public Health Service to improve the health and living conditions of the negro race As formerly, each day of the week will be set aside for a specific purpose, and a special negro health week bulletin will be issued giving effective methods of carrying out the program In addition, three-color posters giving appropriate information will be distributed free in a limited quantity and other copies may be purchased at nominal cost from the superintendent of documents, government printing office, Washington, D C

International Oto-Rhino-Laryngological Congress—The first International Congress of the Oto-Rhino-Laryngological Congress will be held in Copenhagen Denmark July 29-August 1, the American Committee has announced The United States will be represented by more than seventy-five delegates, who will sail from New York, July 6 on the *Caronia* Membership is by invitation only The cost including attendance at the congress, will be $987, which covers every ordinary expense, 15 per cent should be paid on making application for a reservation The party will spend about six weeks in Europe sailing for home on the S S *United States*, August 9 It will visit clinics in France, England, Germany, Norway and Sweden Detailed arrangements may be made with the American Committee, Suite 656, 25 Broadway, New York

Correction—Dust in Air of Cities—In a general news item, January 7, The Journal published a list of cities giving the number of dust particles per cubic foot in the air of each as published in the New York *Times*, Dec 7, 1927 The city manager of Cincinnati, Mr C O Sherrill, writes that this article does an injustice to that city He has received information from Mr H C Murphy, indicating, Mr Sherrill says that the figures quoted were unreliable and showing that Mr Murphy gave them out after making four tests at various localities in the cities, and eight tests in a period of four years in Cincinnati, using his own discretion as to the location of the tests and the method of taking them Mr Sherrill gives the following quotation from Mr Murphy s letter

> The figures given in my paper are in each case the result of at least four tests taken at various localities in the downtown districts of the cities in question In Cincinnati I have made eight tests covering a period of four years in the downtown districts using the Hill Dust Counter taking air at approximately 5 feet above the sidewalk on days which are as nearly typical of winter dust conditions as possible

Mr Sherrill has corresponded with the U S Weather Bureau in an effort, he says, to secure reasonably accurate comparative tests of air content throughout the largest cities of the United States

Society News—The Pacific Coast Oto-Ophthalmological Society will meet, April 18-20, and the western section of the American Laryngological, Rhinological and Otological Society, April 21, at Santa Barbara, Calif——Dr Edward L Keyes, professor of clinical surgery, Cornell University Medical College, New York, has been elected president of the American Social Hygiene Association for 1928 and Dr Donald R Hooker Baltimore secretary The honorary president is Dr William H Welch Baltimore——Dr Lawson G Lowrey was elected president of the American Orthopsychiatric Association at the fifth annual meeting in New York, February 25, which was attended by 540 persons, twenty-two papers were read at this meeting A conference of executives of child guidance clinics, held for three days at the Institute for Child Guidance, New York, was attended by representatives of twelve different clinics ——Dr John H Musser, professor of medicine, Tulane University of Louisiana School of Medicine, New Orleans, was elected president-elect of the American College of Physicians at the New Orleans meeting, March 8 Drs Aldred S Warthin, Ann Arbor, Mich, and Solon Marx White Minneapolis, were reelected vice presidents, Dr Williams McKim Marriott was elected third vice president, and Drs Clement R Jones, Pittsburgh, and George M Piersol, Philadelphia, were reappointed treasurer and secretary-general, respectively

The New Ransdell Bill—Senator Ransdell has introduced a bill, S 3391, which provides for the creation of a national institute of health under the jurisdiction of the secretary of the treasury and the administrative control of the surgeon general of the public health service It would be devoted to scientific research in the fundamental problems of diseases in man and matters pertaining to health For this purpose the treasury would appropriate $10 000 000 or as much thereof as might be necessary The bill also authorizes the acceptance on behalf of the United States of gifts by will or otherwise for the study of disease The surgeon general would be authorized to establish fellowships and to utilize the proceeds thereof in aid of scientists who demonstrate proficiency in research Professors instructors and experts could be appointed on recommendation of the surgeon general without regard to civil service laws The provisions of this bill correspond with those in a bill previously introduced by Senator Ransdell, which embodied also the provisions of the original Parker bill in the House The passage of the Parker bill in an amended form seems to have suggested the expediency of the introduction of this revised Ransdell bill Senator Ransdell has decided to postpone hearings on the new bill for a week or two to aid in the passage of the Parker-Jones bill which provides for the coordination of public health activities of the government (The Journal, March 10 p 781)

B J Admits Chiropractic Is Doomed—In addressing a meeting of 500 chiropractors and sympathizers in Philadelphia, February 26 Mr B J Palmer, the daddy of chiropractors," made some illuminating remarks According to the *Pittsburgh Medical Bulletin* he said Fully 80 per cent of the chiropractors in Pennsylvania are practicing medicine not chiropractic That is a sorry fact gentlemen—we are practicing medicine During the last year I have been in every state in the Union, and this condition exists throughout My ideals concerning chiropractic were shattered Chiropractic is doomed You have drifted so far from the basic principles of chiropractic that you have lost your identity and brought the basic science bill upon your heads Twenty-eight chiropractic schools have closed recently, and many others will follow The supreme courts in seven states have handed down legal injunctions during the last eighteen months, whereby these states are lost forever to chiropractic I warned Ohio not to compromise They tried to pass a bill engrossing medical principles and practices I predicted its failure It lost by 250 000 votes There has been $250 000 of chiropractic money spent in California in the last year You cannot defeat the ends of science The basic science bills are the buck shot which we deserve for trespassing When chiropractors preach and practice and try to become physicians, then it is justifiable for the medical men to educate the chiropractor Now beat that argument if you can That is why we are losing right along This will probably be the last time you will see me as a chiropractor, as I do not propose to lose my good money in fighting against sound arguments ' Incidentally, it is said that the number of students at Mr Palmer's million dollar school at Davenport, Iowa, has decreased from 3,500 to about 300

CUBA

Dr Agramonte Honored —Among many distinguished speakers at the New Orleans meeting of the American College of Physicians, was Dr Aristides Agramonte, Havana Dr Agramonte was given an ovation when he rose to review the adventure of those who demonstrated that yellow fever was transmitted by means of mosquitoes, he was a member of that renowned group of army officers—Reed, Carroll Lazear and Agramonte—which was appointed by the United States to conduct the investigation in Cuba At a special meeting of the faculty, members of the American College of Physicians, students and citizens of New Orleans, Dr Agramonte was awarded the degree of doctor of laws by Tulane University The yellow fever situation in 1878 was described by Dr Allan C Eustis More than 4,000 deaths occurred in the city at that time, while closed trains, Dr Eustis said, left the city in all directions carrying frantic citizens who believed that yellow fever was spread by contact Dr Agramonte was guest of honor at a luncheon of the New Orleans Association of Commerce which presented him with a gold life membership in recognition of the gratitude of New Orleans for his part in the investigation of yellow fever

FOREIGN

Influenza in Tokyo—Half a million persons were reported in news dispatches, March 5, to have been stricken with influenza in Tokyo, of whom about 2,000 had died The emperor himself was ill, and his 6 months old daughter Princess Hisa, is reported to have died of influenza

Number of Physicians in Australia—The *Medical Journal of Australia* states that the number of medical practitioners in Australia has increased from 4,773 in 1925 to 5 231 in 1927, or 4 37 per cent a year The general population is increasing at the rate of about 2 per cent a year In New South Wales there are said to be 2 134 medical practitioners, in Victoria, 1,692, *in* Queensland, 551, *in* South Australia, 449, *in* Western Australia, 254, and in Tasmania 151

German Society of Internal Medicine—This society will meet in Wiesbaden, April 16-19, under the chairmanship of Prof L R Mueller The general topic for discussion will be the influence of cancer on metabolism There will be a joint meeting with the German Pathological Society, April 19, the subjects for discussion at this meeting will be chronic hypertrophy of the spleen, the normal spleen as a blood vessel, the clinical aspect of splenomegalias, and the pathologic anatomy of hypertrophies of the spleen

Professorship in Hormone Chemistry—After much effort on the part of the faculty, Tokyo Imperial University has decided to establish a course in hormone chemistry in the medical department beginning in April The *Japan Medical World* considers this to be the first course of its kind The cost of maintaining the laboratory for the course has been donated by the society for the advancement of pharmacology in an amount believed to be between 200,000 and 300 000 yen Dr Akira Ogata will be promoted to the rank of professor and placed in charge of the laboratory, he has been studying hormone chemistry in Europe for two years

Course in Psychiatry in English at Vienna—An intensive course of fifty days, six hours daily, in neurology and psychiatry will be given in English at the Neuropsychiatric Clinic of Prof Wagner von Jauregg and the Neurological Institute of Professor Marburg at the Vienna University during June and July The fee will be $214 including subscription at the American Medical Association of Vienna, under whose auspices the course is provided Applications accompanied by a certified check of $50 sent to Docent Dr E Spiegel, I, Falkestrasse 3, will be accepted in order of priority More than twenty teachers will assist

Centenary of Glasgow Medical Journal —The February issue of the *Glasgow Medical Journal,* the centenary number is largely a review The birth of the journal in 1828 appears to be obscure The present editor was unable to find information about any organization which brought it into being In a history of the journal are pictures of its editors among whom were William MacKenzie, William Leishman, William Weir and Joseph Coats There are contributions on the medical school of Glasgow University, 1828-1928, medical journalism by the editor of *The Lancet* Sir Squire Sprigge, the progress of therapeutics, and the Glasgow hospitals of a century ago

Tercentenary of William Harvey's "De Motu Cordis"—Delegates and distinguished guests from various parts of the world have been invited to London to participate in the tercentenary celebration by the Royal College of Surgeons of the publication of William Harvey's "De Motu Cordis," beginning May 14 According to the *British Medical Journal* the college will revive on this occasion an honor that it bestowed seldom in the four centuries of its existence by electing to honorary fellowship the Earl of Balfour, Sir Ernest D Rutherford, and Profs Ivan Petrovitch Pavlov and Karl Friedrich Wenckebach, each of whom has rendered signal service in the advancement of medical science

Government Services

Army Personals

The resignations of Major Roy Lorraine Scott and Capt William D Gill as officers of the army have been accepted by the President Capt Joseph I Martin has been assigned to duty at Carlisle Barracks, Pa, following a course of instruction at the infantry school, Fort Benning Ga Major Henry L Kraft is relieved from Fort Bliss and assigned to Camp Marfa, Texas Major Charles E MacDonald will be relieved from Camp Marfa and assigned to Fort Bliss Capt Guy B Denit will report to the surgeon general, Washington D C, for duty in his office Major Glenn I Jones is relieved from duty as student at the army war college on completion of the present course and will proceed to Carlisle Barracks, Pa, for duty with the first medical regiment Capt Roy F Brown is relieved from assignment at Fort Jay, N Y, and will report to the commanding officer, Walter Reed General Hospital, Washington, D C, for duty Capt Anthony J Vadala will proceed from U S Army Soldiers' Home, Washington, D C, to Fort Jay for duty Capt Edward L Moore will proceed from Jefferson Barracks, Mo, to the U S Soldiers' Home, Washington, D C, for duty Major William E Hall is relieved from Fort Meade, S D, and will proceed to Jefferson Barracks Capt Charles A Bell is relieved from duty at the Letterman General Hospital, San Francisco, and will proceed to Fort Meade for assignment to duty The following officers have been ordered to the army war college for duty as students in the 1928-1929 course Lieut Col Frank W Weed and Majors Joseph E Bastion and Francis X Strong Majors Albert S Dabney and Garfield L McKinney have been relieved from duty at Carlisle Barracks, Pennsylvania and detailed as additional members of the general staff corps, Washington, D C Major Albert P Clark has been relieved from duty as a member of the general staff corps in the office of the chief of staff effective June 30, and will proceed to Fort Sam Houston, Texas, for duty Major Joseph de R Moreno is relieved from duty at Fitzsimons General Hospital, Denver, and will sail from San Francisco about March 21 for New York, proceeding to West Point for assignment to duty

Examination for Entrance in Army Medical Corps

The War Department announces an examination for appointment as first lieutenants in the medical corps of the regular army, July 9-13, to fill the thirty-nine vacancies that exist in the corps at present Applicants must be graduates of recognized medical schools, between 23 and 32 years of age, who have had one year internship and are licensed to practice The salary of first lieutenants ranges from $2,700 to about $3,100 When commissioned, these officers are usually sent to the army medical college, Washington, D C, and Carlisle Barracks, Pa, for several months training Requests for information should be addressed to the adjutant general, U S Army, Washington, D C

Qualified Candidates for the Navy

Among the 230 senior medical students at class A medical schools who took the examination for appointment in the navy in January, 117 were found professionally qualified There will be about fifty vacancies in the corps, July 1, and the first fifty qualified candidates on the list will be commissioned on graduation in June to fill the vacancies

U S Public Health Service

Surg Joseph Goldberger was directed, January 6, to proceed to Milledgeville, Ga, and return in connection with studies of nutrition being carried on by the public health service Acting Asst Surg Charles F Bolduan has been relieved from duty at Bremen, Germany, and assigned to Ellis Island N Y Surg Carroll Fox has been directed to proceed to such places as may be necessary in Brazil, Argentina, Paraguay, Uruguay, Chile, Peru and Ecuador in connection with matters relating to preventing the introduction of epidemic diseases into this country Surg (R) Oswald E Denney has been ordered to active duty, effective, March 1, at marine hospital number 66, Carville, La Asst Surg Gerald T Sprague has been relieved from Fort Stanton, New Mexico, and assigned to duty at the relief station, San Diego, Calif Surg Walter L Treadway has been directed to proceed to Warsaw, Poland, and other points in Europe where medical examinations of aliens are being conducted, when directed

Foreign Letters

LONDON

(From Our Regular Correspondent)

Feb 11, 1928

The Falling Birth Rate and the Tax-Paying Classes

This country can now be divided into two classes—those who pay taxes and derive no benefit from them except the usual ones, the preservation of order and the maintenance of our defenses, and those who, if they pay taxes at all, pay little and whose main concern is the advantages they can derive from the taxes paid by others As a result of the socialistic trend of our legislation in recent years the burdens imposed on taxpayers have become too onerous for many worthy self-supporting citizens who cannot afford to bring up families Their low birth rate causes concern to eugenists, who say that we are reproducing slowest from our best stock In a joint letter to the *Times* Major Leonard Darwin (president of the Eugenics Society), Prof Elliot Smith and other eugenists argue that the allowance for children made in taxation should be increased They refer to the fact that two distinguished American authors recently calculated that 1,000 college graduates will scarcely have 200 grown-up great grandsons, while 1,000 miners will have 3,700 We have no corresponding British figures and no past experience to guide us in this matter except perhaps the Roman empire at its climax If this failure to reproduce took place, not only among those with a university training but also among all endowed with exceptional ability and energy, it would be a disaster Income-tax payers as a class, owe their position to the industry, forethought, self-control, and the intelligence of themselves and their ancestors These qualities will tend to reappear in their descendants on account of both parental example and natural inheritance Considerable sections of this class are not having families large enough to maintain their numbers It is desirable that their fertility should be increased With this object the signatories suggest an increase in the income-tax allowances for children An increase in the fertility of the income-tax-paying classes can also be advocated on economic grounds, for the capital of a country consists not only in material things but also in the attainments of its citizens Greater fertility among income-tax payers would result in an increased expenditure on education, with a consequent increase in the national capital, to the advantage of all classes The present allowances for children are faulty They are on a flat rate, with the result that they form such a small proportion of the total income of the well-to do as to have no appreciable effect on their fertility The larger the income, up to a point, the greater should be the allowances

The Bicentenary of Hunter

The bicentenary of the birth of John Hunter, "the founder of scientific surgery," was celebrated at the Royal College of Surgeons by an exhibition of portraits and relics, the delivery of the Hunterian Oration by Sir Holburt Waring and a dinner Even at ordinary times the personality of Hunter pervades the college His portrait by Reynolds hangs in the council room, and in the hunterian museum are his statue and thousands of his preparations A selection of these was made for the bicentenary exhibition with such personal relics as his pocket scales and lancets The famous skeleton of the Irish giant O'Brien, which Hunter took so much trouble to obtain, and whose lower bones are painted in the background of Reynolds' picture, was in evidence In his oration Sir Holburt Waring described Hunter as the creator of their museum and the patron saint of their college Hunter formulated the idea that it was essential for the surgeon to have a minute knowledge of man in health and of the changes which occurred during the onset and course of disease He did not hesitate to compare the structures and functions of man with those of the lower animals and even with those of plants Since Hunter's day surgical technic had reached a high stage of perfection Sir Holburt did not think that such great progress could be expected in the future In his opinion the main advances will be along biochemical and biophysical lines, as regards both diagnosis and treatment

Dermatitis from Hair Dye Failure of Action for Damages

The danger of producing dermatitis from the use of paraphenylendiamine as a hair dye is now well known In the following case a woman failed to recover damages from the hairdresser He used a dye containing 30 per cent of paraphenylendiamine but exhibited a notice disclaiming liability for any ill effects, which he said occurred in about 2 per thousand persons 'As it is impossible to know these few without a test, we are willing to give this free trial on the customer s own responsibility " The woman wanted her hair dyed blue-black like that of a friend who had recently been so treated and was given the preliminary test The dye was applied to a patch behind the ear of the size of a sixpence The result was described as dermatitis of the scalp, inflammation of the ear, neck and chest, swelling of the eyelid, insomnia and shock She denied that she saw any notice The judge left it to the jurors to say whether she had received adequate warning of the risk If she had, they should find a verdict for the defendant This they did

New Medical Regulations for British Settlers for Canada

The new regulations for prospective British settlers in Canada are causing some concern in this country Formerly the medical examination was performed by a roster of British physicians In future it will be performed by Canadian physicians in this country and some fear that this will have a restrictive effect However, an official of the Canadian emigration department states that so far from wishing to restrict the entry of British emigrants, the desire of the authorities is to obtain more The object of the new regulations is to enable the final examination to take place in this country rather than in Canada Owing to the rule of the Canadian authorities that every emigrant must be finally passed by a Canadian physician it was formerly necessary to have two medical examinations—one in this country by a British physician and the other in Canada by a Canadian one Under the new scheme, examination in the dominion will not be necessary unless the emigrant has withheld information with regard to his health or has been exposed to infection during the voyage across the Atlantic It is hoped that the new scheme will save the emigrant expense The fee charged by the British physician has been $2 50 for medical examination of an adult and often over $5 for a family No charge will be made by the Canadian physicians Centers for examination have been arranged so that the railway and other expenses incurred by would-be emigrants will in no case amount to more than the $2 50 fee formerly charged, and in the majority of cases the expenses will be less No reflection is cast on the British profession, but for years it has been urged that the final examination should take place in this country rather than in Canada, thus saving emigrants from being rejected after crossing the Atlantic No friction has arisen with the British medical authorities However, organizations in this country concerned with emigration to Canada have misgivings The emigration department of the Salvation Army complains that the Canadian authorities are now insisting on intending emigrants going through all the routine of a civil examination before the medical one It would have been simpler to ascertain first if the applicant was physically fit and then deal with other matters Complaints have also been made as to the slowness of the procedure

Chemical Warfare on Civilians

The effectiveness of poison gas discharged from aircraft over cities was discussed in a lecture at the Royal United Service Institution by Major Victor Lefebure He said that the combined effect of aircraft and poison gas was a horrible subject and constituted the most powerful argument for restricting chemical warfare The conditions under which chemical warfare became most deadly were simple a stationary dense objective with a sure method of applying adequate concentration of the lethal chemical It was largely the absence of these conditions in the war which prevented the decisive results which might have been expected But cities gave the possibility of the maximum efficiency Dr Owen of the air ministry has shown that the total weight of solid particles in a London fog is about 1 pound per million cubic yards This is higher than the effective concentration of gas war chemicals, particularly the new arsenic compounds Assuming that such compounds dropped from aircraft would not dissipate into a layer more than 100 yards high, a very fair assumption for large cities, less than a quarter of a ton of chemical would be adequate to cover a square mile If they allowed such a high factor as 100 to provide for the barriers which would prevent uniform concentration in the heart of the city, they would see the ease with which a surprise air attack or a large attack in which even 90 per cent of the airplanes were brought down could induce chaos and terror

Major J D Pratt, chief superintendent of the chemical warfare research department, said that the figures quoted as to gas attack from the air might be misleading, as such small quantities would produce only temporary incapacity from which a person would soon recover, and even then there must be exposure for a certain length of time The atmosphere was never still, so that the gas would be gradually drifted away and with people indoors it might drift down a street without any casualties The lecturer in reply said that he had purposely stated quantities of chemical in excess of that needed under ideal conditions to allow for the contingencies mentioned by Major Pratt

PARIS

(From Our Regular Correspondent)

Feb 8, 1928

Diminution of the Alcohol Consumption in France

Recent statistics show that the alcohol consumption of France has diminished by one half, over a space of thirty years In 1898 the total consumption expressed in the form of absolute alcohol, was 1,800,000 hectoliters, which was the highest point ever reached In 1913 the total had been reduced to 1 558 000 hectoliters or a decrease of 242 000 hectoliters Ten years later, after the war, the total in 1923 was only 1,035,000 hectoliters which marks a decline in consumption of 765,000 hectoliters In dividing these figures by the total population, it will be noted that the average individual consumption has dropped from 4 70 liters per person in 1898 to 3 96 liters in 1913, 2 67 liters in 1923, and 2 53 liters in 1926 A comparison of the individual consumption in 1898 with that of 1926 shows a decrease of 2 17 liters or 46 per cent This is a result over which all will rejoice who have been interested in combating by every means possible the incidence of alcoholism in France The figures given thus far represent averages, and one notes wide differences in comparing the average individual consumption in the various departments of France In Calvados the annual individual consumption is still 8 liters of pure alcohol, in Orne, 6 10 liters, in Seine, 5 20 liters, in Eure, 4 80 liters, in Cantal, 0 40 liter, in Hautes-Alpes, Basses-Alpes and Vendee, 0 30 liter, in Creuse, 0 20 liter, and in Lozere (the lowest figure) it is 0 07 liter In six departments the individual annual consumption of alcohol exceeds 4 liters of pure alcohol, and in thirty-three departments it does not reach a liter The low consumption in so many departments is due, in great part, to the energetic antialcohol campaign staged and waged by the physicians, but is influenced also, possibly to an even greater extent, by the present heavy internal tax on alcoholic beverages

The Senatorial Inquiry on the Management of the Insane

The numerous laws bearing on the insane are in a constant state of flux, for the occasions for finding them either too rigorous or too lax are many In support of the contention that they are too severe, instances of arbitrary commitments by the maneuvers of interested parties are cited As evidence for the belief that they are too lenient, cases are mentioned (and, unfortunately, they are much more frequent and more certain) or insane persons who are dismissed too soon, under legal conditions, however, and who commit, later, crimes and misdemeanors for which they cannot be held accountable, and for which their victims cannot make claim for damages Dr Toulouse, who established in Paris the dispensary of prophylactic mental hygiene, which has become the Hopital Henri Rousselle, has been summoned to give his opinion before the senate commission that is engaged in revising the text of the laws pertaining to the insane Dr Toulouse recommended, very naturally, his system of placing under observation for a week by specialists all persons arrested for misdemeanors who are alleged to be mentally ill Following the reception of the report of the psychiatrists, the individual will either be sent to prison as being fully responsible for his acts, or will be sent to a psychopathic hospital to be treated, where he will be subjected to a prolonged observation in the section termed "open," in which he will be placed under treatment Internment in the section of the hospital termed "closed" will be determined on by a board of expert psychiatrists designated by the court from a list of specialists who are appointed following a rigid scientific competitive examination The decision of this board will be final, not even the courts can take an appeal from it This is the essentially new feature of the law, for heretofore the magistrates who yielded, unconsciously, to influences brought to bear on them had the right to liberate any inmate of a psychopathic institution, as they deemed best, and no account was taken of the opinion of experts unless they so ordered

The Creation of New Anticancer Centers

A new anticancer center has been opened in the Charonne section as a result of the initiative of the Ligue franco-americaine contre le cancer This will be more particularly a school center for women nurses An organization of this kind was already established at the Hopital Tenon, in the service of Dr Proust As with this, the new center is devoted to the instruction of nurses, visiting women so called women superintendents of hygiene training for mission work in factories, and the volunteers who render kindly aid to the various organizations for the promotion of hygiene and public charity Instruction is given how to detect cancer in the early stages by pointing out the first signs that are likely to attract attention, in order that the patient, who is often still ignorant of his disease, may be directed to institutions where he can be treated—by radium or by surgery—at a stage in the development of the cancer when he still has chances of recovering The idea is spread among the public that cancer is often curable if treated in time The Charonne Center comprises, in addition to the lecture hall, a dispensary for cancer patients, in order that specimens may be available to show to the pupils, and also a few beds for patients who receive applications of radium or who undergo, under local anesthesia, minor removal operations

A new anticancer center was likewise recently dedicated at Marseilles It has a surgical service, a deep roentgen-ray service, and a radium service It is provided with two research laboratories, the Pavillon Bergonie and the Pavillon Curie

Deaths

The death of Prof Felix Henneguy has been announced He was vice president of the Academy of Sciences, member of the Academy of Medicine, and had had a brilliant career as a biologist He had succeeded Balbiani to the chair of comparative embryogeny in the College de France His researches brought forth some important practical conclusions in connection with fish culture He founded, in collaboration with Ranvier, the *Archives d anatomie microscopique* He was an officer of the Legion of Honor

Prof Xavier Armozan, occupant of a professorial chair in therapeutics and chemistry at the Faculte de medecine de Bordeaux, has died at the age of 76 He was one of the best known clinicians of the provinces He was associate member of the Academy of Medicine He published several treatises regarded as classics

MADRID

(From Our Regular Correspondent)

Jan 15, 1928

Immunity

Dr Bordet of Brussels recently lectured on immunity before the Academy of Medicine The discovery of the specificity of antibodies has been extended from the immunologic to the biologic field Different species may be distinguished only by their chemical structure Among individuals belonging to the same species, subtler differences may exist It is generally agreed that antigens are proteins The character of such proteins would then serve to identify diverse species However, this conception must be extended, as Bordet and Renaux have found that animal species are characterized by their lipoids as well as by their proteins

Undulant Fever

Recently Dr M Tapia, the director of the epidemic hospital, lectured on Malta fever at the Madrid medical school Tapia takes issue with Marañon's view that the goat is essential for the presence of the condition in man In Rhodesia in 1922 an epidemic coincided with an abortion epizootic in sheep In Tapia's hospital a recent patient had never taken goat's milk nor been near goats, but took care of a cow stable

No part of Spain is now free from the disease, which used to be confined to the southern and eastern parts of the country Ramon y Cajal saw cases in Aragon during the annual migration of goats, and Garcia Izcara has found foci of contagious abortion in Madrid The relation of human cases with a bovine or porcine origin is less evident than in the case of caprine infection Tapia disagrees with the British commission as to the simplicity of diagnosis and the specificity of the agglutination Nicolle saw typhus patients who agglutinated *Micrococcus melitensis,* and Tapia had a patient with typhoid whose serum agglutinated *M melitensis* at 1 1,000 The technic must be revised to exclude paraspecific agglutination Diagnostic limits of agglutination vary a great deal, and even 1 10 and 1 5 values may have some significance In synovitis and arthritis cases the organism was isolated from the serous fluid and not from the blood The intradermal test advised by Duran de Cottes has been found valuable Statements as to a low death rate in undulant fever must be discounted, especially in rural districts

Neurovaccine in Smallpox

Dr E Gallardo of the Alphonse XIII Hygiene Institute lectured recently on the use of Levaditi's neurovaccine in Spain This product is still but little employed, perhaps because of difficulties in preparation and its selective action on the nervous system However, it may render great service, especially in tropical climates Gallardo has shown that it is easy to prepare while the best proof of its safety lies in the many vaccinations performed in Spain without any mishap Gallardo then described the method of preparation Any normally potent skin virus can be grown in rabbit's brain without previous passage through the testis, as advised by Noguchi Two sterilization methods are used ether or centrifugalization After subdural inoculation in the rabbit, cerebral sections are taken and following sterility tests are placed in sterile glycerol and saline solution for ten or twelve days These preserved specimens are the ones used for vaccination

Only in malnourished children or when the mother is careless do sores develop During the last four years the institute has furnished provincial inspectors with more than 2 500 000 doses of this vaccine, and thousands of vaccinations have been performed in southern Spain and the Canary Islands All physicians seem satisfied with the results, and former complaints as to impotence of the vaccine in summer have ceased

Gallardo has studied 20 365 vaccinations and revaccinations with this vaccine Takes reached 91 05 per cent in primary vaccinations and 58 60 per cent in revaccinations The provincial health inspector at Caceres, after an intensive vaccination campaign studied the result in 227,000 cases Takes amounted to 90 per cent in primary vaccinations and 50 per cent in revaccinations

Temporary Closing of a Famous Hospital

One of the most famous Spanish institutions is El Niño Jesus Hospital, founded by the Duchess of Santoña in 1877 for the treatment of indigent children Throughout its long existence this meritorious hospital has received outside help only twice once a premier granted a subsidy, another time a lady left it a legacy of 200 000 pesetas (about $34,000) The increasing cost of living has borne heavily on the institution and when the provincial charities board discontinued the free dispensaries it supported there, 166 of the 250 inmates had to be discharged and eventually the hospital had to close its doors This event threw some light on existing precarious conditions The physician in chief received a salary of 3 000 pesetas ($500) a year, staff physicians $170 and junior physicians $85, while nurses were paid only about $2 a month After a few months when some of its endowment income accumulated, the hospital opened again, to the great consolation of poor mothers all over Spain

Prognosis in Typhoid

Dr Zarco Bohorques of the Madrid Infectious Disease Hospital gave a lecture on capillaroscopy in the prognosis of typhoid His attention was called to the fact that in the necropsy service of the hospital the number of cases in which the cause of death could not be accurately explained far exceeded the rest of the group In almost 75 per cent the cause was listed under the vague term of vasomotor paralysis The clinical expression in life fitted in with what Hutinel called malignant syndrome, a condition which seems an actual fact but lacks definite details Zarco then thought of using capillary examination as a means of foretelling the course of typhoid Vasomotor paralysis stands out among causes of death in the disease Death takes place about the end of the second week, and the only anatomic signs other than enlargement of peripheral capillaries are enlargement of the intestinal lymphatic system scattered follicles and Peyer's patches The terminal syndrome may develop either suddenly or gradually None of the component symptoms has any identifying value, save when it is too late On the other hand, the enlargement of the peripheral capillaries, while not pathognomonic, is the best available sign to demonstrate the presence of the so-called malignant syndrome Dr Zarco believes that the toxin of the typhoid bacillus acts directly on the capillary vessels

RIO DE JANEIRO

(From Our Regular Correspondent)

Feb 15, 1928

Streptothrix Leproides in Leprosy

Drs J M Gomes and D do Pateo Jr, have reported to the São Paulo Biologic and Health Society their further work on complement fixation with defatted *Streptothrix leproides* in leprosy This test, while valuable for diagnostic purposes, has still more significance in prognosis and treatment In recent cases it demonstrates the existence of an infection before symptoms have appeared A strong reaction invariably points to a serious condition, in which treatment will prove either ineffectual or harmful A positive result may express the existence of immunity rather than latent infection In early cases or *formes frustes* the test often proves negative

Hemolytic Complement

Dr E Vaz has called attention, before the São Paulo Biologic and Health Society, to an uncommon source of error in titrating hemolytic serums It consists in the presence of hemolysins in the guinea-pig against the sheep cells The striking feature in his case was the large amount of hemolysins 1 cc of a 1 20 dilution completely hemolyzed 0 5 cc of a 5 per cent cell suspension in ten minutes Interference by heterologous antibodies was suspected, as the guinea-pigs had received typhoid-paratyphoid vaccine This was disproved, however, when the phenomenon was repeated with serum from other guinea-pigs The complementary unit was below the hemolytic dose The use of a control tube is valuable, in order to detect a possible source of error

Coagulation and Toxicity

Dr L de Assumpção of São Paulo has drawn from some experiments the following conclusions There is a certain parallelism between the toxic power of *Lachesis lanceolatus* (bushmaster) venom and its coagulating power There is no relation between the toxicity of *L lanceolatus* venom and its neutralization by a specific serum As demonstrated by Brazil and Vellard, the two titrating methods yield different results with venoms from different species of snakes With *Crotalus terrificus* (rattlesnake) venom the anticoagulins in the plasma parallel the antitoxic power of the serum, but this does not apply to the venom of *L lanceolatus*

New Biologic Institute

Because of the importance assumed by biologic research in protecting the coffee industry, the State of São Paulo has created a biologic institute for plants and animals under the direction of Dr A Neiva The following physicians have received appointments Dr H Rocha Lima, chief of the animal division, and Drs G Pacheco, A Fialho, P Galvao and A Hempel assistant chiefs, respectively of microbiology, pathology, physiology and entomology and parasitology The high standing of the appointees bears proof of the purpose of the authorities to make this institute a really scientific organization

ITALY

(From Our Regular Correspondent)

Jan 15, 1928

Congress of Hydrology, Climatology and Physical Therapy

The Associazione medica italiana di idrologia, climatologia e terapia fisica held recently in Milan its eighteenth national congress The congress was opened with an address by the chairman, Professor Devoto, in which he recalled the work of the association during forty years of activity spent in developing the natural therapeutic resources of Italy An address by Professor Piccinini followed in which he announced the outcome of the prize contest held by the association on the subject "The Historical Evidence and the Actual Remains of Roman Thermal Baths in Italy" The winner was Dr Botto-Micca of Turin

THE MECHANISM OF THE ACTION OF MINERAL BATHS

Speaking on the first main topic, 'The Mechanism of the Action of Mineral Baths," Professor Valenti of Milan explained the various theories proposed to account for the therapeutic effects of mineral baths (the theory of absorption of contact, of radioactivity, the electric theory, the chemico physical theory, and others) The mechanism of the action of mineral baths is complex, being due to multiple factors

THE SOJOURN OF TUBERCULOUS PERSONS IN CLIMATIC RESORTS

The second main topic on the program, "The Sojourn of Tuberculous Persons in Climatic Resorts," was discussed by Professor Da Gradi and Dr Silvano They affirmed the principle of the harmlessness to guests and inhabitants of climatic resorts of tuberculous persons hospitalized in sanatoriums, provided the sanatoriums are properly organized and the patients are given hygienic instruction The assembly instructed the management of the association to take steps to have a law passed that would provide rigorous supervision of the treatment of tuberculous persons in care-taking institutions, with a view to protecting them and the healthy persons who reside in the same locality As the place of meeting for the next congress, Campi Flegrei (near Naples) was chosen

Following the congress of Milan, Professor Devoto convened a special session for the discussion of problems of nutrition

Dedication of the Minich School

As a branch of the Ospedale Civile of Venice, there has been established the Scuola pratica di medicina e chirurgia, the funds for which were furnished by the Prof A Minich Foundation The dedicatory address was delivered by Professor Vitali on the subject "De praesagenda vita et morte aegrotantium," which is the title of the work by Prospero Alpino (1601) Professor Vitali emphasized the importance of prognosis with respect to the patient and his family, and recalled that Hippocrates was the first physician of antiquity who had made prognoses The speaker then discussed the various morphologic types and the studies on the individual constitution, which is so important for the prognosis

Prof Vittorio Ascoli Honored

In the quarters of the *Policlinico* in Rome, Prof Vittorio Ascoli, director of the Clinica Medica, was the guest of honor at recent ceremonies held in celebration of his completion of the tenth year of instruction at the University of Rome Professor Ascoli gave a summary of the work that he had done, during the ten years, in organizing the institute Speaking then of the scientific trend of his school, he stated that, while recognizing the great importance of the study of the constitution, there is no need of neglecting the significance of extrinsic pathogenic causes, just as, along with the consideration of hormones and nerve relations, pathologic anatomy still maintains all its significance Therefore, a thorough study of the patient must begin with researches on the individuality of the subject, and must be based on anamnestic observations and on the physical and functional examination of the patient, completed by biologic researches

A Contest in Food Hygiene

In connection with the Milan Exposition, the Societa italiana d igiene has announced a contest in which those who have on display food substances, apparatus or instruments for preparing foods, methods of preserving foods, and the like, are called on to participate The contest will cover twelve distinct sections, as follows (1) The hygiene of milk and milk diets, the hygiene of the cow stable (2) the selection and preservation of eggs (3) the hygiene of meat, (4) the hygiene of the bread industry, pastry and sweetmeats, (5) the hygiene of the preparation of wine and its derivatives, (6) mineral waters, (7) food oils, (8) tea, coffee, chocolate and similar beverages, (9) the cultivation and preservation of fruits and vegetables, (10) food hygiene and food therapy (11) the hygiene of the kitchen, dish-washing apparatus, other time saving utensils, and (12) disinfestation of the orchard, fruit garden, stable, poultry house, and the like

BERLIN

(From Our Regular Correspondent)

Feb 11, 1928

Combined Treatment of Malignant Diphtheria with Diphtheria Antitoxin and Streptococcus Antitoxin

During the past two years in Berlin there has been an increase in the number of diphtheria cases and in the number of cases that have terminated fatally Researches have shown that in half of the observed malignant cases highly virulent streptococci are present not only in the pharyngeal membrane but also in the blood In the municipal hospital both diphtheria serum and streptococcus antitoxin have, of late, been injected Before the Berliner Medizinische Gesellschaft Professors Finkelstein and Fritz Meyer recently reported the results of such treatment Meyer expressed himself as follows Bacteriologic researches on malignant (toxic, septic) pharyngeal diphtheria reveal, in 50 per cent of all cases, hemolytic streptococci in large quantities In such researches both the Löffler serum and the blood plates should be taken into account The streptococci form a poison that, at the site of entrance, sets up changes similar to those produced by the diphtheria toxin (necroses, marked cellulofibrous inflammation), causes severe changes in the heart muscle and in the liver, and leads to exceedingly severe anemias The genuine streptococcus toxin has the capacity of forming antitoxin, which can be biologically tested as to its efficacy and potency This tested streptococcus antitoxin should be injected in all cases of malignant diphtheria along with large doses of diphtheria antitoxin, as it is harmless in all cases and in the cases with streptococcus involvement (about 50 per cent) it is needed for a cure According to the report of Professor Finkelstein, of the forty-nine toxic cases in which the method cited was not employed, forty-three (children), or 88 per cent, terminated fatally, while, of the forty-seven cases in which the combined treatment was used, only twenty-eight, or 60 per cent, resulted in death A portion of the children treated were admitted in a hopeless condition and died within twelve to thirty-six hours. According to his observations, the application of the streptococcus antitoxin in combination with the diphtheria serum deserves to be tested further. The combined treatment is indicated only for the toxic cases, in the nontoxic cases, only the diphtheria serum should be employed, as it is effective in the present epidemic as well. Finkelstein bases the diagnosis "toxic diphtheria" more particularly on the presence of a "white" or "lymphatic" edema about the swollen glands of the neck as a sign of toxic capillary injury, and on the more marked albuminuria, as a sign of nephrosis. Both are early manifestations. The extent of the pharyngeal membrane is not conclusive, as toxic diphtheria may be associated with a slight local membrane formation, while the nontoxic type may present an extensive formation. More important is the discolored appearance and the fetor, which is absent in the nontoxic type. Finkelstein applied the method in all toxic cases, without waiting for the bacteriologic report, that is to say, also in the cases in which no streptococcus was involved. The dosage ranged between 25 and 75 cc. In the type of toxic diphtheria associated with hemorrhagic diathesis, in which the prognosis is especially bad, the combined treatment did not appear to give better results than treatment with the diphtheria antitoxin alone. The late paralysis, which is evidently of purely diphtherial origin, is not prevented, nor the respiratory paralysis. From the last mentioned involvement Finkelstein lost a number of children (as late as from the seventh to the eleventh week) who had passed fortunately through the acute stage and also severe circulatory disturbances. In view of such late deaths, a cure was not recorded in the statistics until the eighth week had passed without the appearance of threatening nerve symptoms.

In the discussion on the two reports mentioned (which are published in No. 6 of the *Deutsche medizinische Wochenschrift*) Professor Friedemann of the department of infectious diseases of the Rudolf Virchow Hospital, expressed his disapproval of the combined treatment, as he had failed to see any good effects resulting from it. Prof. G. Klemperer of the Moabit Hospital, on the other hand, evidenced his warm support of the method. Dr. Werner Schultz of the Westend Hospital and Professor Braun of the Friedrichshain Hospital admitted that they had not observed any good results of the method, though Braun did not take an opposing attitude. Professor Jurgens of the Urban Hospital, as well as the other physicians who discussed the method—for example, the hygienist Prof. Martin Hahn and the social hygienist Professor Gottstein—were ardently in favor of using diphtheria serum as early as possible if there is clinical evidence for the diagnosis, before the diagnosis has been confirmed by the bacteriologic examination, for it is an established fact that mortality from diphtheria is lower, the earlier the serum is employed. The danger from hypersensitiveness — the appearance of serum sickness when the injections are repeated —is very slight, and will be still less if the albumin is removed from the serum which has become feasible through recent methods of preparation. Professor Gottstein pointed out that only the clinician has the right to decide whether a remedy is effective or not and that, for this reason, the figures presented by Professor Friedberger to the alleged effect that the mortality was already on the wane before the diphtheria serum was introduced and that no influence on the mortality was to be observed from the application of the serum, cannot be regarded as conclusive. Whatever attitude is taken, whether the fluctuations in the number of diphtheria cases are due to the mode of treatment employed or to the introduction of social-hygienic measures, the main thing is that diphtheria patients shall be brought to the hospitals as soon as possible, for there the therapeutic and care-taking measures can be carried out better than in the homes of the patients.

Marriages

EDWARD ANTHONY MLADICK, Melrose Park, Ill., to Miss Gladys Jayne Castans of Chicago, February 18.

WILLIAM P. DUNCAN, JR., Tampa, Fla., to Miss Louise Van Dyke of Atlanta, Dec. 23, 1927.

JAMES HORACE CHISM, Carthage, Tenn., to Mrs. Frances Woosley of Nashville, Dec. 28, 1927.

HENRY P. LEDFORD to Miss Myrtle Hirschi, both of Wichita Falls, Texas, March 6.

ISAAC SKIR to Miss Jane Langer, both of Brooklyn, February 26.

Deaths

William Warren Townsend ⊕ Burlington, Vt.; University of Vermont College of Medicine, Burlington, 1893; professor of genito-urinary diseases at his alma mater; past president of the Vermont State Medical Society; member of the New England Surgical Society, the American Association of Genito-Urinary Surgeons and the American Urological Association; served during the World War; attending genito-urinary surgeon to the Mary Fletcher Hospital, Fanny Allen Hospital, and the Bishop De Goesbriand Hospital, Burlington; consulting genito-urinary surgeon to the Rutland City (Vt.) Hospital, the Proctor (Vt.) Hospital and the Champlain Valley Hospital, Plattsburgh; aged 57; died, February 20, of cerebral hemorrhage.

Edwin Gilman Goodrich, Los Angeles; University of Southern California College of Medicine, Los Angeles, 1903; member of the California Medical Association; assistant professor of emergency surgery, College of Medical Evangelists; police surgeon to the Los Angeles Receiving Hospital; president of the National Association of Police and Fire Surgeons; aged 60; died, February 6, of heart disease.

Clyde Ellsworth Ford ⊕ Cleveland; Cleveland College of Physicians and Surgeons, Medical Department Ohio Wesleyan University, 1902; formerly instructor of surgery at his alma mater; past president and director of the American Association of Industrial Physicians and Surgeons; city health officer, 1910-1916; at one time secretary of the state board of health; aged 53; died, February 19, of heart disease.

Joseph Borland Sayles ⊕ Taunton, Mass.; Bellevue Hospital Medical College, New York, 1888; Dartmouth Medical School, Hanover, N. H., 1888; member of the New England Dermatological Society; served during the World War; formerly on the staff of the Morton Hospital; aged 62; died, February 21, at the Truesdale Hospital, Fall River, of heart disease.

Samuel S. Gaulden, Quitman, Ga.; University of Maryland School of Medicine, Baltimore, 1886; past president of the Brooks County Medical Society; at one time president of the state board of medical examiners; formerly member of the state legislature and member of the local school board; aged 68; died, February 7, of nephritis and cerebral hemorrhage.

John McQuaid Thompson, Nashville, Tenn.; Harvard University Medical School, Boston, 1889; member of the American Psychiatric Association; connected with the U. S. Veterans' Bureau; aged 65; died, Oct. 29, 1927, at the Protestant Hospital, of endarteritis obliterans and myocarditis.

Israel Brown ⊕ Norfolk, Va.; Medical College of the State of South Carolina, Charleston, 1894; for two years member of the state legislature; served during the World War; for many years on the staff of St. Vincent's Hospital; aged 54; died, February 10, at Charlottesville, of heart disease.

Horace Kendall Foster ⊕ Peabody, Mass.; Dartmouth Medical School, Hanover, N. H., 1882; for many years city physician; formerly president of the board of trustees and on the staff of the Josiah B. Thomas Hospital; aged 73; died, February 20, of carcinoma of the stomach.

Kinch Collins Knolle ⊕ Brenham, Texas; Medical Department of the Tulane University of Louisiana, New Orleans, 1909; past president and secretary of the Washington County Medical Society; served during the World War; aged 42; died, February 18, of angina pectoris.

Alfred Bernard Camille De Passe ⊕ Forest Hills, N Y , Columbia University College of Physicians and Surgeons, New York, 1911, on the staffs of the Jamaica Hospital, Richmond Hill, Mary Immaculate Hospital, Jamaica and the New York Polyclinic Medical School and Hospital New York, aged 37, died, February 19

Charles J Saunders ⊕ Fort Dodge Iowa State University of Iowa College of Medicine, Iowa City, 1885, member of the Radiological Society of North America, past president of the Iowa State Medical Society formerly on the staff of St Joseph Mercy Hospital, where he died, February 18, aged 65, of lympathic leukemia

William Stout, Larned Kan , St Louis College of Physicians and Surgeons 1908, member of the Kansas Medical Society, superintendent of the Larned State Hospital aged 42, died February 19 of a fracture of the cervical vertebrae received when the automobile in which he was overturned

Melvin Lazelle Moore ⊕ Los Angeles Rush Medical College, Chicago 1880 Bellevue Hospital Medical College New York, 1882, formerly professor of obstetrics University of California Medical School, Berkeley, aged 68, died February 25, of heart disease

Walter Lathrop ⊕ Hazleton, Pa University of Pennsylvania School of Medicine, Philadelphia 1890, medical superintendent of the Hazleton State Hospital, where he died February 9, of septic laryngitis and cerebral thrombosis aged 59

Samuel B Arment, Bloomsburg Pa , Jefferson Medical College of Philadelphia, 1877, member of the Medical Society of the State of Pennsylvania formerly on the staff of the Bloomsburg Hospital, aged 75, died in February, of heart disease

Charles Sargent Underhill, Ogunquit, Maine, College of Physicians and Surgeons Boston 1912 member of the Maine Medical Association aged 38, died, Oct 8 1927 at St Barnabas Hospital, Portland, following an operation for hernia

James Thompson Rea, Chicago, Milwaukee Medical College 1908, member of the Illinois State Medical Society aged 64, died February 23 of septicemia, following an infected wound of the finger, accidentally self-inflicted

Harry R Simmons, Corinth, Ky , Kentucky School of Medicine, Louisville, 1893, member of the Kentucky State Medical Association, also a druggist, aged 61 died, February 10 of arteriosclerosis and softening of the brain

Frank Turner, Heyworth, Ill , Rush Medical College Chicago, 1893, member of the Illinois State Medical Society aged 59, was instantly killed February 19, when the automobile in which he was driving was struck by a train

John Lynnville Puckett, Kokomo Ind , Medical College of Indiana, Indianapolis, 1879 member of the Indiana State Medical Association Civil War veteran formerly mayor of Kokomo, aged 81 died February 22 of paralysis

John Russell Eastman, Chicago, Rush Medical College Chicago, 1893, served during the World War, connected with the U S Veterans' Bureau, aged 59 died suddenly, March 1, at his home in Evanston of heart disease

Walter Lesesne Anders ⊕ Tulsa, Okla , University of Pennsylvania School of Medicine, Philadelphia, 1919, formerly on the staff of St John's Hospital aged 42, died Dec 29, 1927 in a sanatorium at Guthrie

Marcus Miller Carr ⊕ Dallas Texas, Southern Methodist University Medical Department, Dallas, 1914 served during the World War aged 39, died, February 20 in the Barnes Hospital, St Louis, of carcinoma

James Myron Young ⊕ Cedar Rapids Iowa , State University of Iowa College of Medicine, Iowa City 1903 aged 52 died, February 21, of cerebral embolism, following an operation for strangulated hemorrhoids

William E Glosser ⊕ Williamsport Pa , University of Pennsylvania School of Medicine, Philadelphia 1893 for many years on the staff of the Williamsport Hospital aged 59, died, February 13

John Edgar Bercaw ⊕ Okmulgee Okla , Starling Medical College, Columbus, Ohio 1902 member of the Radiological Society of North America, aged 47, died, February 13, of carcinoma of the thyroid

Joseph Hall, Bay Minette, Ala University of Alabama School of Medicine, Tuscaloosa, 1901, member of the Medical Association of the State of Alabama, aged 59, died, February 2, of angina pectoris

Nathan M Baker, Spokane Wash , University of Pennsylvania School of Medicine, Philadelphia 1889 formerly on the staff of the Deaconess Hospital, aged 68, died, January 2 of cardiovascular disease

Ivy Pease Tash, Fairfield Maine Medical Department of the University of the City of New York 1879 member of the Maine Medical Association aged 79 died suddenly Dec 17, 1927, of heart disease

Noah Webster Clark, Rossville, Ind , Medical College of Indiana Indianapolis 1904 member of the Indiana State Medical Association aged 57, died suddenly February 24 of heart disease

Henry Arthur Griffin ⊕ New York Medical Department of Columbia College New York, 1889 comptroller of the Barnard College aged 63 died, February 23 of coronary thrombosis

Barney E Garrison ⊕ Wayne City, Ill College of Physicians and Surgeons, Keokuk Iowa, 1881, past president of the Wayne County Medical Society, aged 68 died, February 18

Charles Paget Duffy, Brooklyn Bellevue Hospital Medical College New York 1882, aged 72 died February 10, at St Vincent's Hospital, New York, of hypertrophy of the prostate

Hal C Bell, Detroit Detroit College of Medicine and Surgery 1927, aged 26, died January 17 in the Harper Hospital, of cerebral hemorrhage, probably due to brain tumor

Messer Highfill, Marshfield Mo Missouri Medical College St Louis, 1887 member of the Missouri State Medical Association, aged 69, died, January 28 of cerebral hemorrhage

George William Goodale ⊕ San Francisco College of Physicians and Surgeons of San Francisco 1900 aged 54 died, February 26 of chronic myocarditis and arteriosclerosis

Roscoe Conkling Metzel ⊕ Baltimore University of Maryland School of Medicine Baltimore, 1905 aged 48 died, February 29, of carcinoma of the kidney with metastasis

Stephen Hanford Hankinson, Augusta Ga , University of Georgia Medical Department, Augusta, 1900, aged 50 died February 11 of cerebral hemorrhage and arteriosclerosis

George H Jones ⊕ Lutcher La , Medical Department of the Tulane University of Louisiana New Orleans, 1891, aged 66, died Dec 18 1927, of cerebral hemorrhage

Abner Lewis Davis, Findlay Ohio, Pulte Medical College Cincinnati, 1877 aged 77 died January 24 at the Home and Hospital of the City of Findlay of diabetes mellitus

K W King, Salado, Ark (licensed Arkansas 1903) member of the Arkansas Medical Society aged 48 died January 31 at Searcy of carcinoma of the liver

Mary B Jewett, Florence Villa, Fla Woman's Medical College of the New York Infirmary for Women and Children 1895, aged 69, died February 5 of carcinoma

William Erastus Mabry, St Petersburg Fla Missouri Medical College St Louis, 1875 Civil War veteran, aged 82 died, February 12 of chronic myocarditis

Charles James Watson, Jr ⊕ Philadelphia Jefferson Medical College of Philadelphia 1916 aged 36 died, February 9, of burns received when his bed caught fire

James A Mitchell, Ursa Ill College of Physicians and Surgeons, Keokuk Iowa 1881, aged 73 died February 14 of carcinoma of the lung and sacrum

Burleigh C Kellam, Norfolk Va College of Physicians and Surgeons Baltimore 1884 aged 65, died February 4, of acute dilatation of the heart

Kyle Patrick Elam, Persia, Tenn Lincoln Memorial University Medical Department Knoxville, 1906 aged 63, died January 29 of tuberculosis

Lewis C Griffith, Bowling Green Ind (licensed, Indiana, 1897) aged 79, died February 19, at the Community Hospital Brazil, of pneumonia

Alvin M Wallingford, Flemingsburg, Ky , Jefferson Medical College of Philadelphia, 1865, aged 86, died, February 15 of cerebral hemorrhage

Pratt P Ferguson, Blytheville, Ark , Barnes Medical College St Louis, 1895, aged 58 died, January 31, at New York of paralysis

Francis Morris Broach, Ansley, Ala , Southern Medical College, Atlanta, 1890, aged 72, died, February 6, of erysipelas

Bureau of Investigation

MORE MISBRANDED NOSTRUMS

Abstracts of Notices of Judgment Issued by the Food, Drug and Insecticide Administration of the United States Department of Agriculture

Pildoras Ovaricura—The Flar Medicine Company at Coamo, Porto Rico, sold a quantity of "Pildoras Ovaricura," which the federal authorities declared was misbranded When analyzed, these pills were found to contain iron sulphate and plant material, including aconite, aloe, ginger and cinnamon The preparation was sold under the false and fraudulent claim that it would cure diseases peculiar to women In June, 1927, judgment of condemnation and forfeiture was entered, and the court ordered that the product be destroyed—[*Notice of Judgment 15315, issued February, 1928*]

Cerebrotono—A quantity of "Cerebrotono" was sold and offered for sale in Porto Rico by the Flar Medicine Company of Coamo The government charged that the preparation was misbranded When analyzed by the federal chemists Cerebrotono was found to contain calcium, sodium, potassium and iron glycerophosphates with plant extractives, alcohol and water The stuff was found to contain over 10 per cent of alcohol but the label failed to bear any statement of that fact Furthermore, Cerebrotono was falsely and fraudulently sold as a sure and efficient tonic reconstructive of the brain and nerves, being especially recommended for general debility and sexual weakness In June 1927 judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed—[*Notice of Judgment 15315, issued February, 1928*]

Pildoras Ferrogenas—These pills were sold and offered for sale by the Flar Medicine Company of Coamo, Porto Rico, and the federal authorities charged that they were misbranded When analyzed, "Pildoras Ferrogenas" were found to contain iron and potassium carbonate and sulphate comparable to Blaud's pills The claims made for these pills were false and fraudulent, and in June 1927, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed—[*Notice of Judgment 15315 issued February, 1928*]

Zovia—The Zovia Wonder Water Company in January, 1927, shipped from Alhambra, California, to the State of Washington a quantity of "Zovia," a so-called concentrated mineral water Analysis by the federal chemists showed the article to be essentially a solution of Epsom salt in water The product was described as a Food—Not a Medicine" and was said to be "composed of mineral salts essential to all human and animal life, scientifically compounded in such a way that the body extracts those minerals of which it is in need and discards those that are not needed" There were a number of other equally false and fraudulent claims, and in June, 1927, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed—[*Notice of Judgment 15327, issued February 1928*]

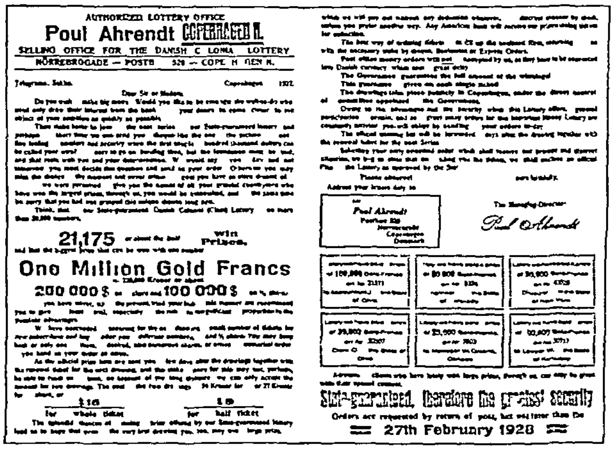
Elixir Eneglotaria—In February, 1927, it was charged that the Eneglotaria Medicine Company Santurce, Porto Rico, was selling and offering for sale "Elixir Eneglotaria," which the federal authorities declared was misbranded According to the federal chemists this preparation consisted essentially of mercury and potassium iodides, sarsaparilla extract, alcohol and water It was sold as a cure for 'scrofula,' eczema, rheumatism chronic catarrh and syphilis In June, 1927 the Eneglotaria Medicine Company, Inc, having admitted that the claims were false and fraudulent, judgment of condemnation and forfeiture was entered and the court ordered that the product be released to the company on payment of the costs and the execution of a bond, conditioned, in part, that the product be not sold or otherwise disposed of without first having been truthfully labeled.—[*Notice of Judgment 15328, issued February, 1928*]

Jarabe de Guayaco Eneglotaria—This preparation was being sold and offered for sale in February, 1927, by the Eneglotaria Medicine Company, Santurce, Porto Rico, and the federal authorities declared that the stuff was misbranded When analyzed by the Bureau of Chemistry, "Jarabe de Guayaco Eneglotaria" was found to consist essentially of mercury and potassium iodides, guaiacol, sugar, alcohol and water The claims made for the preparation were false and fraudulent, and in June, 1927, the Eneglotaria Medicine Company, having admitted this fact, judgment of condemnation and forfeiture was entered, and the court ordered that the product be released to the company on payment of the costs and the execution of a bond conditioned, in part, that the preparation be not sold or otherwise disposed of without first having been truthfully labeled—[*Notice of Judgment 15328, issued February, 1928*]

THE DANISH LOTTERY FRAUD

Poul Arendt Fishes for Easy American Dollars

Physicians in small towns through the Middle West, but not in the large cities, have recently received an "Invitation to a Trial of Fortune in the Danish Colonial Lottery' The "invitation" comes from a "Mr Poul Arendt," who does business from Postoffice Box 529, Copenhagen, Denmark Mr Arendt's advertising matter might be plausible to those who are not familiar with the more high-powered and subtle "get-rich quick" gentlemen that we raise in our own country But to those of us who have been circularized by realtors of vision, Texas oil-field agents and others of similar stripe, Mr Arendt's circular must seem tame indeed This melancholy Dane starts out thus



AUTHORIZED LOTTERY OFFICE

Poul Ahrendt COPENHAGEN N.

SELLING OFFICE FOR THE DANISH C LONIA LOTTERY

21,175 win Prizes.

One Million Gold Francs

200 000 $ 100 000 $

$16 for whole ticket

$8 for half ticket

Poul Ahrendt

State-guaranteed, therefore the greatest security

27th February 1928

> Dear Sir or Madam—Do you wish to make big money? Would you like to be amongst the well to do who need only draw their interest from the bank?   Then make haste to join in the next series of our State guaranteed lottery and perhaps in a short time we can send you a cheque like the one in the picture Is it not a fine feeling of comfort and security when the first couple of thousand dollars can be called your own?

And so on Should you wish to take a flier, $16 of real American money will buy a whole ticket or $8 a half-ticket Mr Arendt declares, in black-faced type that "Post office money orders will not be accepted by us" The reason given is that they "have to be converted into Danish currency, which causes great delay' Possibly But a letter from the office of the Solicitor of the Post Office Department, Washington D C, U S A, written as late as February 2, 1928 states that under date of January 30 1928, the Postmaster General issued a fraud order against Poul Arendt of Copenhagen, directing postmasters to return all mail addressed to said party with the word "Fraudulent' stamped thereon The Postmaster General at the same time also directed all postmasters of the United States to issue no money orders payable to Poul Arendt

However, Mr Arendt is perfectly willing to accept United States currency, United States express orders, or United States bank drafts!

Correspondence

"PROPHETIC MEDICINE"

To the Editor —An article in the February *Scribner's*, 'Prophetic Medicine," by Dr C Ward Crampton, contains statements which, to my mind, are excessive I call the matter to your attention rather than to the editor of *Scribner's* because such articles are frequently appearing in the lay press and their whole tone tends to place the profession in a false, not to say dishonest, light The effusion in *Scribner's* is particularly distasteful it is written by a member of the regular profession, the director of the "Health Service Clinic" at the Post-Graduate Medical Hospital of New York, and appears in one of the staidest of American magazines articles in *Scribner's* have weight with the public because they are usually thoughtful at least accurate

"Prophetic Medicine" has as its thesis the familiar and by now well worn appeal for periodic examinations, on the basis that these will detect unsuspected disease tendencies which can be ameliorated and, in this way, an individual's life be prolonged for considerable periods of time

Let us look at some of the author's statements It appears, on page 214, that William Adamson, aged 40 has just been overhauled and his physician says to him "Your condition is about the average of the city man of the corporation vice president type In a few days you will get a six page record of your tests with my recommendations Your prospects? *You will live on your present programme till fifty-two or fifty-three By good fortune and following very simple instructions you can probably live and live well to seventy-five or over* " (italics mine) Is there any clear scientific proof that any "*simple instructions* of which any living creature is now aware can prolong the life of a man who is going to die at 52 to the age of 75? It must be actuarial proof, of course —statistical proof If there is any such proof wouldn't it be a good thing to get it into the record—to give, as Pooh-Bah says, "An air of verisimilitude to what would otherwise be a bald and unconvincing narrative?' Are the probabilities in favor of any such statement? Does what we know of physiology, pathology and therapeutics conduce to such a belief? From my own inadequate knowledge of these subjects I should say that the probabilities are exactly contrary to such a supposition

On page 221 the case of a physician is outlined His only complaint was fatigue "Despite unfailing regularity, an intestinal stasis was present He had unknowingly allowed himself to poison his body for many years, and his kidneys were showing the first faint signs of protest In another few years he would be a 'case of chronic nephritis—'Bright's disease' 'You are a lucky man,' he was told 'Now we are ahead of it all We can manage your margin and your prospect of living long will be quadrupled "

There you are ladies and gentlemen—just what you have been wanting to know The cause of chronic nephritis! And so simple after all these floundering years of doubt—intestinal stasis But, does any man of standing in the profession believe such rot? Is there any real evidence that there is a stage in the development of chronic nephritis when the process can be stopped by any means applicable by man? And is the medical profession prepared to authorize such ballyhoo?

We now approach the most important of Dr Crampton's exhibits "Of the small remainder who take their health examinations, some will fall into the hands of a busy, hurried physician who has his whole attention on curing disease He makes a cursory, rapid examination in a crowded office hour, slaps his man on the back and says 'There is absolutely nothing the matter with you You can get a $100,000 insurance policy any day' This may be partly true, but it is woefully misleading"

Ponder that paragraph very carefully Digest it Notice the busy hurried physician who has gone and made the mistake of devoting his whole attention to the curing of disease That is just only the practitioner who has known the candidate for longevity since childhood Notice the cursory examination Not one of these painstaking six page recommendations! Probably doesn't know how to make very delicate tests Notice that woefully misleading slap on the back Is that any way to treat a wisher for immortality? What is the implication of all this? Well it is pretty obvious isn't it? Repent ye while there is yet time Come to the mourner's bench Don't go to your doctor come to the right place There is only one Allah and Mohammed is his prophet Prophetic medicine

Perhaps it would be interesting to the various ladies and gentlemen running life preserving stations to know what would be regarded as evidence for their statements It can be done in this wise Two comparative human groups of sufficient size to make the experiment worth while must enter the experience at the same age I suggest 10 000 as the minimum number worth while and 30 as the age One of these groups pursues the tenor of its way uninterrupted by medical advice except when symptoms call, the other submits to annual physical examinations and follows all the advice given by the examiners These two groups are followed until all the members die Annual reports as to comparative death rates in the two groups will be looked at with interest but they will not be considered conclusive

There is only one set of reports of which I have knowledge in which any attempt has been made to approximate the ideal I have suggested Dr Crampton mentions them in his paper and the manner of his mentioning them is significant On page 222 he says 'Of six thousand men examined by an insurance company (reported by Dublin and Fisk) there was a decrease of deaths amounting to 28 per cent—surely worth while" Now the reports of Dublin and Fisk and particularly Knight (*Am J M Sc* **170** 576 [Oct] 1925 various papers by Augustus S Knight, M D, published by the Metropolitan Life Insurance Company), while I do not agree with the conclusions do furnish forth the facts They show that a group of 6,000 policyholders of the Metropolitan Life Insurance Company, all thinking themselves healthy submitted to examination by the Life Extension Institute beginning in 1915 In 1920 this group showed an improvement in mortality over the expectancy of the American Mortality Tables of 28 per cent *But the whole experience of the company showed an improvement which reduced this percentage to 24 per cent* This Dr Crampton does not take occasion to inform his readers And in the six-year period that is, by 1921, the improvement in mortality of this examined group had fallen to 18 per cent This also Dr Crampton does not feel called on to divulge

And will some one please explain how any man is privileged to state that life can be prolonged in an individual twenty-three years when the experiments on which that statement are based have been in operation to date only thirteen years?

'But,' it is usually objected 'these examinations do no harm and may do some good Why interfere? No one has the slightest desire to interfere By all means, let them continue But let us, as a profession, cease to make promises as to their result which we cannot substantiate before we know those results The profession in its statements to the public has always played fair When we advocated typhoid inoculation we had a definite procedure to carry out and its valuable results had been abundantly proved It is possible that similar benefits will attend the pursuit of the plan under consideration But I for one am willing to leave it in the hands of the general practitioner "who has devoted his whole attention to curing disease," in which way I feel certain that the public will be protected from the onslaught of such trumpery as that exhibited by Dr Crampton

Logan Clendening, M D, Kansas City, Mo

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed Every letter must contain the writer s name and address but these will be omitted on request

TREATMENT FOR MENTAL CONDITION ASSOCIATED WITH WORRY CONCERNING SIZE OF SEX ORGANS

To the Editor —Please advise me concerning the following case A man aged 28 whose general health is normal and unusually good has been very successful and has a fine income in a responsible position He expects to be married in eight or nine months to a finely developed woman To his great distress the penis both in the natural and in the *erected state is extremely small—that is smaller than I ever saw before* —probably half the normal size This has worried him greatly for some years Now in the face of marriage the fact is almost an obsession It is a constant worry and he looks forward with many misgivings The testes seem normal as do erections and sex appetite The spermatozoa are normally abundant and active Some years back he had several homosexual experiences This has not been repeated for four years and he seems to have outgrown the desire for such abnormalities He masturbated only slightly some years ago These are all the facts I have assured him in every possible way that when the time comes proper instruction in technic will probably obviate any trouble in coitus Even this assurance does not stop his worry Aside from the worry about this trouble he seems to me normally balanced I have noted that many of the surgical instrument houses advertise a suction penis developer—a sort of a pump arrangement Is this treatment of any value? Is it worth trying? Even if it would produce no great development in the face of his constant worry and early marriage would it be justifiable to advise him to use this instrument? It almost seems to me that he would be better off using it than to go on worrying in this hopeless manner At least he would feel that he was helping I cannot find any literature on this subject Please omit name

M D Colorado

Answer —Attempts to increase the size of the penis by the production of passive hyperemia by suction instruments are futile The so called suction penis developers are, for all practical purposes, nothing but mechanical masturbators It is unfortunate that reputable surgical instrument houses will stock these worthless and vicious instruments The federal authorities have declared several proprietary forms of this device fraudulent (see 'Adjusto ' The Journal, Feb 12, 1927, 'Perfection Developer" and 'Burt Vacuum Tube," The Journal, Jan 16, 1926) In view of the history of the patient, it may be suggested that such manipulations are apt to revive his masturbatory inclinations

The only successful therapy in such instances is a psychic one It may be suggested to the patient that a small organ will encounter lesser difficulty in the act of defloration than one of larger dimensions It may also be helpful to quote the experience that the reciprocity of the female does not depend on the size of the male organ With a view to progeny, the fact may be quoted that fecundation is independent of the factor of size The persuasive influence of a conservative psychoanalyst may be also considered in handling this case

PREGNANCY FOLLOWING ECTOPIC GESTATION

To the Editor —1 What is the relative frequency of full term pregnancy following ectopic gestation? 2 Can you refer me to any gynecologic authority who recommends any treatment other than operation as soon as the condition is diagnosed? What treatment if any? Please omit name

M D, New York

Answer —1 It is assumed that the first query refers to full term intra-uterine pregnancy following ectopic gestation Smith (*Surg Gynec Obst* **18** 684, 1914) studied the follow-up records of 192 patients who had been operated on for ectopic pregnancy During a period of five years following the operation among 144 women who were capable of conception, forty-seven (32 6 per cent) had uterine and twenty-three (16 per cent) had repeated extra-uterine pregnancies Forty-two of the former women had living children Funck-Brentano (Des grossesses uterines survenant apres la grossesse extrauterine, These de Paris, 1898) made a compilation of ninety-two cases in which spontaneous labor occurred after previous ectopic pregnancy

2 Robb (*Tr Am Gynec Soc* **32** 373, 1907) advocated the postponement of an operation while the patient was in a state of profound shock and waiting for improvement in the general condition because he believed that the initial hemorrhage was rarely fatal Most men, however, favor immediate operation An exception to the rule of immediate operation is the case in which the acute symptoms have subsided and the blood in the peritoneal cavity has become encapsulated as a hematocele Such a patient should be put to bed and carefully watched If the hematocele grows in size or undergoes suppuration, an operation is indicated In the former case either an abdominal or a vaginal operation may be performed but when suppuration is present all that is usually necessary is evacuation of the infected hematocele and drainage, through a colpotomy incision Another exception to immediate operation is a case in which the ectopic pregnancy has advanced to a point at which a fair-sized fetus is present If the fetus dies it is usually advisable to defer operation for six to eight weeks after fetal death in order to permit the obliteration of the maternal blood sinuses in the placenta and so render the operation relatively bloodless Too long a time should not elapse between fetal death and operation because the fetal sac may become infected In cases of advanced ectopic pregnancy with a living child, an immediate operation should be performed Welton (*Am J Obst & Gynec* 7 158, 1924) believes there is nothing to be gained by operating while a patient is in shock He suggests that a patient in shock be given a trial to demonstrate what she can do by way of a recovery which is demonstrated by systolic blood pressure readings The usual treatment consists of elevating the foot of the bed, applying heat and abdominal compression and giving morphine

RFTIREMENT OF DISABLED OFFICERS

To the Editor —In the editorial comment on the retirement of disabled medical officers of the World War (The Journal February 11) it was stated that regular and provisional officers in the Army Navy and Marine Corps and emergency officers in the Navy and Marine Corps have all been cared for ' I question the authenticity of this sentence as the latest report I have received on the emergency officers of the navy does not grant retirement privileges If I am in error and a new ruling has been made I would appreciate your informing me If not I think your article should be corrected

A C Dean M D, Crookston Minn

Answer —Emergency officers of the navy and marine corps were granted retirement privileges by an act of Congress approved June 4, 1920 (41 Stats 834) This act was amended in 1921 so as to provide that applications for retirement had to be filed not later than Oct 1, 1921 (42 Stats 140) A number of private laws have been passed by Congress, since 1921, providing retirement for certain emergency officers of the navy and marine corps by name, who failed to make application for retirement within the time limit specified in the 1921 amendment

CONVALESCENT SERUM IN MEASLES

To the Editor —Please give me the following information concerning the use of convalescent blood or serum in the treatment or prophylaxis of measles Is there a commercial serum? If so who makes it? If there is no commercial preparation what is the best technic for obtaining blood or serum from convalescents and administering it to patients? I am practicing in a strictly rural county and we are having a severe epidemic of measles there are about 100 cases now and there is a probability of 200 or 300 more any time People are primitive and will not observe quarantine Our county health officer is leaving us for lack of funds so we must handle the situation ourselves

Frank E Hyde M D Beaufort N C

To the Editor —Please instruct me as to getting blood from a patient just recovering from measles and injecting the remainder of the family with this blood Please omit name

M D Colorado

Answer —So far as we know, convalescent measles serum is not being marketed No firm has requested an examination of such a product by the Council on Pharmacy and Chemistry The question of obtaining convalescent measles serum was discussed in The Journal, Aug 21, 1926, page 556, by Park and Freeman

The simplest way to get the blood is to draw it under aseptic precautions from an elbow vein of the convalescent patient and then to inject 4 or 5 cc at once into the muscles of the thigh or buttock of the person or persons who are to be protected In order to avoid coagulation of the blood a fairly large needle should be used, the barrel of the syringe should be large enough to hold the amount of blood required in a given case If many members of the family are to be injected, it may be necessary to draw blood from the vein or veins more than once It goes without saying that the Wassermann test of the donor may be made beforehand if desired

Another somewhat more complicated way is to allow the blood of the donor to clot and then to inject 3 or 4 cc of the clear serum Here, again the most painstaking aseptic precautions must be observed at every step

MULTIPLE PREGNANCY AND ABORTION

To the Editor —Is it possible for a woman with a multiple pregnancy —twins—to abort one in the second month (artificially) and the other in the sixth month (artificially also)? Can you give me any references to such cases? Does each fetus have a separate placenta? Kindly omit name

M D North Carolina

Answer —It is possible for a woman with twins to produce the expulsion of one fetus, artificially and unwittingly long before the other If the woman has a double uterus with an ovum in each horn, the case cited could be explained easily, but even in a single uterus a similar occurrence may be noted Without intervention occasionally one fetus may be expelled and the other go to full term These are cases of double-ovum twins with two distinct placentas Usually however, when a fetus dies it is retained until the end of pregnancy and it is then expelled as a thin flat, mummified fetus—fetus papyraceus or compressus The flatness is due to compression of the fetus between the uterine wall and the membranes of the living child This occurrence is about three times as frequent in single-ovum as in double-ovum twins De Lee (Principles and Practice of Obstetrics, ed 4 1924, p 497) mentions that he delivered twins at term of a woman who five months previously had had an abortion of a five months fetus De Lee quotes Watkins' case of the delivery of twins at three months and of triplets at term of the same pregnancy Holzbach (*Zentralbl f Gynal* **47** 222, 1923) reports a case in which he removed a two months ovum by curettage because of bleeding and less than three months later found the uterus to contain a five to six months' fetus as evidenced by palpation, auscultation and roentgenograms The uterus was normal

TESTED COD LIVER OIL

To the Editor —Kindly give me some information in regard to vitamin tested cod liver oil What is the exact reason for the need of testing? Do the liver of fish vary in concentration of vitamin A? Why? What fish livers are commonly used for manufacturing the oil?

Helen C Goodspeed Philadelphia

Answer —Cod liver oils are tested because it has been found that different lots differ in potency

Reports indicate that the livers of codfish vary in content of vitamin A and that this variation is probably dependent on the food consumed

The fresh livers of *Gadus morrhua* Linne and other species of *Gadus* are commonly used for manufacturing oil

OCCIPUT POSTERIOR POSITION IN LABOR

To the Editor —We have been having in this locality a remarkable number of occipitoposterior positions this past year Recently I had four in a row all in primiparas Will you please give me some reason for this and the best way to handle it in the case of primiparas? Please omit name

M.D South Dakota

Answer —The unusual number of occiput posterior cases may be purely accidental or it may be due to the fact that the patients were seen earlier in labor than usual In a large number of cases the occiput is posterior at the onset of labor, but in about 95 per cent of these cases the occiput rotates anteriorly during labor and the head is delivered spontaneously with the occiput under the symphysis pubis Hence if patients are examined after labor has been in progress a long time, relatively few cases of occiput posterior will be found The latter are spoken of as cases of persistent occiput posterior and are abnormal A careful examination should be made to determine, if possible the cause of this abnormality If the head is high no treatment is indicated unless there is a definite cephalopelvic disproportion, in which case a cesarean section should be performed Otherwise a policy or watchful waiting should be pursued until an indication for intervention arises In the first stage rest should be secured and the pains made bearable by morphine combined with magnesium sulphate, scopolamine or atropine If the progress of cervical dilatation is very slow and the mother begins to show the effects of it a colpeurynter may be inserted into the lower uterine segment, under strict aseptic precautions In a primipara, if the head remains high for a long time after the cervix has been completely dilated, the patient should be anesthetized and the occiput rotated anteriorly and drawn farther down with the hand or with forceps Nothing further need be done, usually because most patients can in due time be delivered spontaneously or with low forceps In a multipara the same procedure may be followed or a version and extraction be performed If the head is engaged and delivery does not take place for a long time after the cervix is completely dilated, the occiput should be rotated anteriorly, in most cases manually but sometimes instrumentally with or without anesthesia Most patients will then deliver themselves spontaneously or the baby may easily be delivered with forceps Lubrication of the vagina with green soap will greatly facilitate rotation of the occiput

DURATION OF INFECTIVE PERIOD OF POLIOMYELITIS

To the Editor —What is the duration of the infective period of acute anterior poliomyelitis? How long should a patient be quarantined? How may persons in close contact with the disease be prevented from becoming carriers?

Mary Knott Bazemore M D West Palm Beach Fla

Answer —The duration of the infective period of epidemic poliomyelitis is not known definitely but it is believed that it does not extend beyond the third week after the first symptoms At any rate, the usual quarantine period required is twenty-one days It would be reasonable to assume that persons coming in close contact with patients with epidemic poliomyelitis might do something to protect themselves from becoming carriers by wearing suitable face masks and gloves as well as gowns and by observing in an especially conscientious and thorough manner all the usual precautions against conveying infectious materials from one person to another

CHLORINATION OF WATER SUPPLIES

To the Editor —While I was in France a few weeks ago my attention was called to the fact that the sanitary authorities condemned the use of chlorine in the aqueducts which supply potable water because it was discovered that the continual drinking of water sterilized with chlorine produced many ailments They substituted ozone for chlorine Please give me your opinion regarding the advantages for the public health by using ozone instead of chlorine

R J Valiente M M D New Orleans

Answer —No satisfactory evidence has ever been produced in this country to indicate that water sterilized with chlorine produces any harmful effects on the human system In 1924 nearly 4 000 000 000 gallons of water a day were being treated in this country with chlorine and it is estimated that not less than half of the population of the country is now consuming chlorinated water The amounts of chlorine that can be satisfactorily applied vary from 0 15 part of chlorine per million parts of water to about 0 8 part of chlorine By the time the water reaches the consumer the free chlorine content is reduced to a small fraction of the amount actually dosed It is almost unbelievable that such small amounts of chlorine can have any physiologic effect Ozone has not found favor in this country as a means of treating public water supplies The efficiency of this process depends on a thorough mixing of ozonated air with the water as well as on an adequate period of contact While the first consideration is a purely mechanical one it has undoubtedly been responsible for unsatisfactory functioning of ozonizing plants It has also been found that ozone treatment in this country is a more expensive process than chlorination From the standpoint of the public health ozone would appear to have no advantage over chlorine and to have the disadvantage of being an uncertain germicidal agent under practical conditions

TREATMENT OF PERSISTENT GONORRHEA

To the Editor —I have a patient with gonorrhea who also has had a prostatitis Now the second specimen urine and third specimen urine are clear The first specimen urine has been cloudy for three weeks showing periods of improvement at different times I am now using strong silver protein (protargol) 1 5 per cent. I have used potassium permanganate silver nitrate and diathermy Please advise how to clear the first urine Please omit name

M D Ohio

Answer —Persistent gonorrheal disturbances in the anterior urethra are as a rule maintained by submucous infiltrations These may be discovered and localized by the introduction into the urethra of an olive tipped sound or bougie After they are once localized they ought to be massaged over a solid steel sound The sounding has to be followed by an irrigation with a mildly antiseptic solution It is not so much the constituents of the solution as the mechanical effect that produces the artificial edema leading to a rapid desquamation

After once the general cloudiness of the urine has subsided, the systematic dilation of the urethra by sounding should be followed by the instillation of some astringent fluid, such as a 0 5 per cent aqueous solution of zinc sulphate In some instances the discharge is maintained by persistent inflammation and sclerosing of the glands on the floor of the urethra

Those can be palpated over an introduced sound as hard, sensitive granules They are definitely recognized by endoscopic examination and are best destroyed by a fine galvanocautery or a diathermic needle introduced through the endoscopic tube

GASOLINE FOR SKIN INFECTIONS

To the Editor —The bane of the farmer and workman s doctor is skin infection Lately I have been using plain gasoline to clean up these various skin sores and infections and with fine success Is there any contraindication to its use and why has it not gained a wider place in the e various infections to which ointments are an aggravation? I follow its cleansing use with solution of hexylresorcinol What is the place of gasoline as a germicide and why is it not more commonly employed?

W H D, M D, Moville, Iowa

Answer —Gasoline has been suggested occasionally, but its irritating properties have seemingly not permitted it to gain much favor This can be appreciated when it is realized that there is a great variation in the commercial forms of gasoline, both from the relation to the source of gasoline and also to the brand that is used The more volatile the product, the more antiseptic and parasitic it is, but, on the other hand, it is also increasingly irritating Dermatitis from gasoline has been reported frequently (The Journal, Nov 6, 1926, p 1579, May 22, 1926, p 1643) A great objection to the use of gasoline is the hazard of its inflammability Purified deodorized kerosene has had some vogue for use in skin diseases chiefly as a substitute for alcohol Commercial kerosene has also had some use for seborrheic dermatitis of the scalp The possibility of absorption of the kerosene or gasoline through the unbroken skin is practically nil on the other hand, it acts as a solvent on the skin, which increases as one goes from the petrolatum to the highly volatile benzin Any oil used to an excess on the skin will, of course, have a tendency to produce folliculitis Purified gasoline, that is, purified petroleum benzin, has been largely used as a solvent for iodine in the disinfection of the skin, but if evaporation is prevented, it has a marked irritant effect and even a caustic action, in fact, Sehrwald (*Deutsche med Wchnschr*, 1913, p 318) has recommended it clinically as a counterirritant The general conclusion is that gasoline as a germicide for use on the scalp will do nothing that cannot be done by other substances, with less risk of undesirable effects

USE OF EPINEPHRINE HYDROCHLORIDE SOLUTION IN THE EYE

To the Editor —Recently I have been treating a retired physician who against my advice used several times a day a few drops of 1 in 1 000 epinephrine chloride solution in his eyes This was followed by dilatation of the pupils and increased intra ocular pressure—a nice case of glaucoma A married woman of 35 a myope of high degree who had been through great emotional stress had a mild conjunctivitis for which I prescribed boric acid, epinephrine hydrochloride 1 in 1 000 40 minims to an ounce of water The eye in which this was used dilated widely and has had a slow response to pilocarpine I am writing a paper for our medical society on glaucoma and would appreciate it if you would advise me whether or not the secondary effect of epinephrine has a tendency to increase intra-ocular pressure I have never seen this occur before with the use of epinephrine over fifteen years furthermore both of these cases might have been caused by other things

M H Stuart M D St Petersburg Fla

Answer —The first case would seem to be a positive response to the Knapp epinephrine test for a glaucomatous tendency In cases in which there is a predisposition to glaucoma, the use of epinephrine hydrochloride solution (1 in 1,000) in the conjunctival sac produces a dilatation of the pupil and at times hypertonicity, whereas in the normal eye there is no response to epinephrine used in that manner In the second case, the epinephrine cannot be held responsible for the mydriasis, unless there should be a heretofore undescribed idiosyncrasy toward the drug There is a very definite phase of secondary hypertonicity after the use of epinephrine subconjunctivally When injected subconjunctivally, by absorption into the orbit, epinephrine stimulates the retrobulbar sympathetics which control the vasomotor system of the uvea There results a marked vasoconstriction with consequent diminution in the actual content of the eyeball The subsequent vasodilatation, which physiologically follows any vasoconstriction, can lead easily to a hypertonicity, unless controlled with miotics This secondary phase has been emphasized recently by Schmidt (*Ber d Deutsch Ophth Gesellsch* 46 50, 1927)

TREATMENT OF CHRONIC PEMPHIGUS

To the Editor —Please give the best plan of treatment for a case of chronic pemphigus in a man of 72 His general condition is good Four carious teeth have been extracted during the course of the disease Please omit my name

M D Illinois

Answer —Some form of arsenic is still the sovereign remedy for chronic pemphigus It may be given by mouth as solution of potassium arsenite (Fowler's solution) or pills of arsenic trioxide with pepper (Asiatic pills) In the so called Dovis treatment iron and arsenic (in the form of ferric cacodylate) is given intravenously and a thromboplastic preparation intramuscularly on alternate days In the hands of a few observers this method has caused complete remission and apparent cures in a few cases In most cases there have been relapses, and eventually a fatal termination Occasional recoveries have been reported following intravenous injections of mercurochrome-220 soluble Tryparsamide also may be tried The local treatment of pemphigus has not changed, baths and bland applications should be used The prognosis in every case of true pemphigus must be guarded

HYPERSIALOSIS

To the Editor —A man aged 58 has had hypersecretion of the salivary glands for more than a year without any apparent cause The only relief I can give him is from the use of atropine and this is only temporary As soon as he stops the atropine, the hypersecretion begins Kindly advise what in your opinion, would be beneficial in a case like this Please omit my name

M D West Virginia

Answer.—Treatment in any case of hypersialosis can be successful and permanent only when a careful search for the etiologic factor has been made, and the factor discovered and removed Symptomatic measures include the use of atropine, opium, and bromides in full doses If the secretion in the mouth is highly acid, an alkaline mouth wash should be used Astringent mouth washes, such as alum, 2 Gm to 100 cc of water should be used The use of filtered, short wavelength roentgen rays locally is recommended

POSSIBLE OPERATION FOR BAGGY' EYELIDS

To the Editor —A patient of mine, a youth aged 21, has edema below both eyes and across the nose following an antrum puncture five years ago No pus was obtained at that time, and the antrums are fairly clear now For cosmetic purposes he wants the edema removed Could you suggest ome treatment and some plastic surgeons who will handle this case?

E W Goldstein, M D Pittsburgh

Answer —It seems that the pathologic condition in this case must be other than that of an ordinary edema Edema is usually the result of an acute inflammatory process or some blocking of lymphatic drainage which is usually of a temporary nature If the edema is due to a chronic interstitial nephritis, it may of course last for a long time, but it is doubtful whether this is true in the case mentioned The tissues of the lower lids are extremely loose, so is it not possible that they are so-called baggy lids and that there is no actual edema present? It seems doubtful whether cosmetic work would be of any value here It is questionable whether a reputable plastic surgeon would undertake the correction of such a case unless the deformity is very pronounced, so that it embarrasses the individual not only in his social contact but also in his occupation

TREATMENT OF SCLERODERMA

To the Editor —I have under observation for the past year a case of scleroderma I have tried all treatments recommended and in the last few months seem to be getting some results from endocrine treatments Some way the family got the news that the Johns Hopkins Hospital had perfected a treatment that was successful and they wanted to carry her to some doctor that was supposed to have this treatment I had not seen anything in The Journal about this and knowing the financial condition of the family I asked them to wait until I could find out about this treatment Do you know of any one doing any research work for this trouble?

J M Anderson, M D, Sears Fla

Answer —In some cases of diffuse scleroderma, thyroid substance is very beneficial, in other cases it is not It should be given careful but thorough trial In The Journal, January 7, page 1, appeared an article from the medical clinic of the Johns Hopkins University School of Medicine The author of the article was Dr Warfield T Longcope and the title, 'Hypoglycemia in Scleroderma The Metabolism in Eight Cases with Reference to the Function of Glands of Internal Secretion'

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

Arkansas Little Rock May 9 10 Sec. Reg Bd Dr J W Walker Fayetteville Sec, Homeo Bd Dr A. A Pringle Eureka Springs Sec Eclectic Bd Dr C E Laws 803½ Garrison Ave Fort Smith

Colorado Denver, April 3 Sec, Dr Philip Work, 324 Metropolitan Bldg Denver

District of Columbia Washington April 10 Sec, Dr Edgar P Copeland Suite 110 1801 Eye St Washington

Hawaii Honolulu April 9 12 Sec, Dr James A Morgan Room 48 Young Bldg Honolulu

Idaho Boise April 3 Commissioner of Law Enforcement Hon F E Lukens Boise

Illinois Chicago, April 10 12 Supt of Reg, Mr V C Michels Springfield

Louisiana New Orleans May 1 Sec, Homeo Bd Dr F H Hardenstein 830 Canal St New Orleans

Minnesota Minneapolis April 17 19 Sec, Reg Bd Dr A E Comstock, 524 Lowry Bldg St. Paul Basic Science examinations April 3 Sec Basic Science Bd Dr E T Bell U of Minnesota Minneapolis

Montana Helena April 3 5 Sec, Dr S A Cooney Power Bldg Helena.

Nebraska Omaha May 1 Sec Basic Science Bd Mr Lincoln Frost, Lincoln

Nevada Carson City May 7 9 Sec Dr Edw E Hamer Carson City

New Mexico Santa Fe April 9 10 Sec, Dr Wm T Joyner Roswell

Rhode Island Providence April 5 6 Sec Dr B U Richards, State House, Providence

Pennsylvania Reciprocity Report

Mr C D Koch, director of the Professional Education Bureau of the Pennsylvania Board of Medical Education and Licensure, reports that 15 candidates were licensed by reciprocity and that 16 candidates were licensed by endorsement of their credentials from July to December, 1927 The following colleges were represented

College	Year Grad	Reciprocity with
LICENSED BY RECIPROCITY		
Howard University School of Medicine	(1912)	Virginia
Northwestern University Medical School	(1915)	Illinois
Johns Hopkins University School of Medicine	(1922)	New Jersey
University of Maryland School of Medicine and the College of Physicians and Surgeons	(1924)	Maryland
Tufts College Medical School	(1922)	New York
University of Michigan Medical School	(1913) (1924)	Michigan
(1920) New York (1922) District of Columbia		
Miami Medical College Cincinnati	(1906)	Michigan
University of Cincinnati College of Medicine	(1919)	Ohio
Jefferson Medical College of Philadelphia	(1912)	Iowa
New Jersey (1919) Minnesota (1924) Maryland		

College	Year Grad	Endorsement with
ENDORSEMENT OF CREDENTIALS		
Harvard University Medical School	(1923) (1924) (1925 3)	N B M Ex
Cornell University Medical College	(1925)	N B M Ex
Western Reserve University School of Medicine	(1926)	N B M Ex
Jefferson Medical College of Philadelphia	(1926 2)	N B M Ex
University of Pennsylvania School of Medicine	(1924)	N B M Ex
(1925 3) (1926) N B M Ex		
Woman's Medical College of Pennsylvania School of Medicine	(1926 2)	N B M Ex

North Carolina December Report

Dr John W MacConnell, secretary of the North Carolina Board of Medical Examiners reports the written examination held at Greensboro, Dec 1, 1927 One candidate was examined and passed Sixteen candidates were licensed by endorsement of their credentials The following colleges were represented

College	Year Grad	Number Passed
PASSED		
Baltimore Medical College	(1902)	1

College	Year Grad	Endorsement with
LICENSED BY ENDORSEMENT		
University of Alabama School of Medicine	(1912)	Alabama
University of Louisville School of Medicine	(1909)	Georgia
(1914) Texas		
University of Maryland School of Medicine and the College of Physicians and Surgeons	(1924)	Maryland
Long Island College Hospital	(1907)	New York
Jefferson Medical College of Philadelphia	(1908)	Penna
Medical College of the State of South Carolina	(1913) (1920)	S Carolina
Medical College of Virginia	(1910)	Virginia
University College of Medicine Richmond	(1909)	Virginia
University of Virginia Department of Medicine	(1912)	S Carolina
(1920) Virginia (1924 2) (1925) N B M Ex		
University of Edinburgh Scotland	(1922)	S Carolina

Nevada November Examination

Dr Edward E Hamer, secretary of the Nevada Board of Medical Examiners, reports the written examination held at Carson City, Nov 7-9, 1927 The examination covered 11 subjects and included 110 questions An average of 75 per cent was required to pass Of the 6 candidates examined, 5 passed and 1 failed Twelve candidates were licensed by reciprocity and 1 candidate was licensed by endorsement of his credentials The following colleges were represented

College	Year Grad	Per Cent
PASSED		
College of Physicians and Surgeons Los Angeles	(1918)	88
Tufts College Medical School	(1910)	76 5
Memphis Hospital Medical College	(1907)	80 1
McGill University Faculty of Medicine	(1919)	85 9
University of Rome Italy	(1916)	77 7*
FAILED		
Tokyo Charity Hospital Special Medical School Japan	(1924)	53

College	Year Grad	Reciprocity with
LICENSED BY RECIPROCITY		
University of Arkansas School of Medicine	(1913)	Texas
Cooper Medical College San Francisco	(1889)	California
University of California Medical School	(1927)	California
University of Illinois College of Medicine	(1924)	Utah
University of Louisville School of Medicine	(1924)	Kentucky
Ensworth Medical College St Joseph	(1894)	Missouri
Kansas City Hahnemann Medical College	(1913)	Kansas
Kansas City Hospital College of Medicine	(1885)	Colorado
Columbia University College of P and S	(1914)	S Dakota
University College of Medicine Richmond	(1901)	N Carolina
Dalhousie University Faculty of Medicine	(1925)	Ohio
University of Western Ontario Medical School	(1911)	Montana

College	Year Grad	Endorsement with
ENDORSEMENT OF CREDENTIALS		
University of Pennsylvania School of Medicine	(1925)	N B M Ex.

* Verification of graduation in process

Nevada May Examination

Dr Edward E Hamer, secretary of the Nevada Board of Medical Examiners, reports the written examination held at Carson City May 2-4 1927 The examination covered 13 subjects and included 100 questions An average of 75 per cent was required to pass Of the 3 candidates examined 2 passed and 1 failed Four candidates were licensed by reciprocity The following colleges were represented

College	Year Grad	Per Cent
PASSED		
University of Maryland School of Medicine and the College of Physicians and Surgeons	(1907)	83 8
Kansas City University of Physicians and Surgeons	(1924)	78 9

College	Year Grad.	Per Cent
FAILED		
Tokyo Charity Hospital Special Medical School Japan	(1924)	57 8

College	Year Grad	Reciprocity with
LICENSED BY RECIPROCITY		
College of Physicians and Surgeons Baltimore	(1911)	California
(1911) Pennsylvania (1915) Utah		
University of Pittsburgh School of Medicine	(1913)	Penna

South Carolina November Examination

Dr A Earle Boozer, secretary of the South Carolina Board of Medical Examiners, reports the written examination held at Columbia Nov 8-10 1927 The examination covered 17 subjects and included 80 questions An average of 75 per cent was required to pass Of the 3 candidates examined, 2 passed and 1 failed Six candidates were licensed by reciprocity The following colleges were represented

College	Year Grad	Per Cent
PASSED		
Washington University School of Medicine	(1927)	86 9
Woman's Medical College of Pennsylvania	(1926)	86 9
FAILED		
Howard University School of Medicine	(1925)	66 1

College	Year Grad.	Reciprocity with
LICENSED BY RECIPROCITY		
Emory University School of Medicine	(1925)	Georgia
University of Georgia Medical Department	(1922) (1926)	Georgia
Chicago College of Medicine and Surgery	(1913)	Kentucky
Tulane University of Louisiana School of Medicine	(1921)	Alabama
Maryland Medical College Baltimore	(1913)	N Carolina

Book Notices

Diagnosis and Treatment of Diseases of the Stomach with an Introduction to Practical Gastro Enterology By Martin E Rehfuss M D Assistant Professor of Medicine at Jefferson Medical College Cloth Price $12 Pp 1236 with 519 illustrations Philadelphia W B Saunders Company 1927

To one who has been watching the splendid investigative work of Dr Rehfuss during the last decade or more, the appearance of a book on diseases of the stomach from his hands cannot come as a surprise In presenting this book to the profession, however, the author seems to have lost sight of the fact that, while his experimental and investigative work is of great value to the medical student and the investigator, it may become a handicap rather than a help when incorporated in a textbook Dr Rehfuss is acquainted with the subject matter under discussion, but the clinical value is lost in a maze of laboratory data After all, there is still a great question as to the value of intricate methods of gastric analysis in the diagnosis of the majority of gastro-intestinal conditions Clinical pictures are desired Many methods described in this volume, such as the technic of roentgen-ray examination and dark room procedures, are best relegated to books on roentgenology The Lyon method of biliary drainage does not seem to meet with favor by the majority of the profession, the other side of the question should be stated As duodenal ulcer is ten times as frequent as gastric ulcer, it would seem that the whole subject should be discussed under the caption of duodenal or gastroduodenal ulcer rather than under the heading of gastric ulcer Students and interns still speak of gastric rather than duodenal ulcers Gastric syphilis might be given in greater detail In spite of these drawbacks this work has many excellent points It is complete The student with an investigative turn of mind can find extensive literature on many of the experimental phases of gastro-enterology The clinician can obtain valuable information The chapters on the relation of extragastric conditions, such as cholecystitis, appendicitis, renal and cardiac lesions, and pancreatitis, are excellent The association of Dr Deaver in the description of surgical treatment, of Chevalier Jackson on endoscopic methods and of Drs Manges and Farrel on cholecystography makes this work authoritative The literature quoted is voluminous

Edmund Lesser's Lehrbuch der Haut und Geschlechtskrankheiten Band II Geschlechtskrankheiten Von J Jadassohn Geh Medizinalrat o Professor und Direktor der Universitats Hautklinik in Breslau Fourteenth edition Cloth Price 26 marks Pp 467 with 95 illustrations Berlin Julius Springer 1927

This edition of Lesser's popular work appears in a new and completely revised form from the pen of one of the world's greatest dermatologists The name of Jadassohn is a sufficient guarantee of the painstaking and thorough revision that this work has undergone The author s personality, his enormous clinical experience, and his thorough knowledge of the literature are reflected in every page Volume II considers the venereal diseases in conformity with the continental grouping of the subject and takes up gonorrhea and its complications, chancroid, acquired and hereditary syphilis, and, more briefly, erosive balanitis and lymphogranuloma inguinale In the eighty-seven pages devoted to gonorrhea is found a splendid summary of our present knowledge of this disease The therapeutic suggestions are conservative and emphasize such procedures as can be easily carried out by the practitioner Contrary to certain French authorities, the author is inclined to minimize the value of the urethroscope in diagnosis The newer methods of chemotherapy, specific vaccine and protein therapy are given proper evaluation In spite of the large number of newer silver salts that are mentioned, it is interesting to note that the writer believes that *silver nitrate in proper dosage will cure most gonorrheal infections* The therapeutic management of the gonorrheal complications emphasizes chiefly the medical side Two chapters on soft chancre (twenty-four pages) are classic descriptions of this disease The section on syphilis (314 pages) includes every phase of the subject The inclusion of visceral and nervous syphilis gives a far broader view than the usual description found in textbooks of dermatology which are limited to the skin and mucous membrane The author emphasizes the present state of flux in syphilotherapy and, while giving due credit to the great advance of the last two decades both in diagnosis and in therapeusis, warns us that the criteria of cure, i e, of complete eradication of spirochetes, are still insufficient Conservatism is apparent in the advice not to exceed a dosage of 0 6 Gm of neoarsphenamine and preferably 0 45 in males, and not to exceed a total dosage of from 4 5 to 6 Gm in one course There are many excellent illustrations and an addendum giving useful formulas Viewing this work as a whole and comparing it with texts in the English language, we do not know of any single volume that gives an equally compact yet complete and masterly presentation of the subject of venerology

A Text Book of *Physiology For Medical Students and Physicians* By William H Howell Ph D M D, Sc D Professor of Physiology in the School of Hygiene and Public Health The Johns Hopkins University Tenth edition Cloth Price $6 50 Pp 1081, with 308 illustrations Philadelphia W B Saunders Company, 1927

Perhaps no writer of textbooks has been more diligent in keeping his volume abreast of the times than has the author of Howell's physiology The text is now in its welcome tenth edition, the ninth was published as recently as 1925 In his preface the author writes as follows

"In view of the great volume of experimental work upon physiology that is continually appearing in our journals, and the fact that special disciplines are required for a full comprehension of the advance along different lines, it is almost presumptuous for any one worker to attempt to give a presentation of the status of the whole subject The author feels keenly his deficiencies for such a task, and if it were a matter of starting anew he would shrink from undertaking it There is, however, a certain obligation, in the case of a book already established, to maintain its usefulness as far as possible by the preparation of new editions at frequent intervals"

It is safe to say that others will not be as conscious of the deficiencies as of the excellences of the book New material has been built into it on the following subjects muscle contraction, the chemistry of muscle, photography of the action current of nerves, the nature of the nerve impulse, the effects of normal conditions on the knee jerk, conduction paths in the spinal cord, the physiology of the cortex of the brain, postural reflexes, the labyrinth, blood constituents, physiology of the cerebellum, medulla and eye, the method of determining the pressure in the blood capillaries, the flow of blood through the lungs per minute, the vasomotor system, oxygen and carbon dioxide in the blood, enzymes, the secretion of gastric juice and other aspects of gastric, intestinal and pancreatic digestion, bile pigments, bile acids, the physiology of the gallbladder and spleen, the formation of urea, the ductless glands, vitamins, and other aspects of nutrition and dietetics Even this long list does not include all of the new material which Professor Howell has consulted for the new edition of his book

Modern Medicine Its Theory and Practice in Original Contributions by American and Foreign Authors Volume V Diseases of the Blood—Diseases of the Lymphatic System—Diseases of the Ductless Glands—Diseases of the Urinary System—Vasomotor and Trophic Disorders—Diseases of the Locomotor System Edited by Sir William Osler M D F R S Re-edited by Thomas McCrae, M D Professor of Medicine in the Jefferson Medical College and Elmer H Funk M D Assistant Professor of Medicine Jefferson Medical College Third edition Cloth Price $9 Pp 948 with 93 illustrations Philadelphia Lea & Febiger 1927

This, the fifth volume of the new edition of a renowned work, requires little comment It covers diseases of the blood, lymphatic system, ductless glands and urinary system, vasomotor and trophic disorders and diseases of the locomotor system In recent months there have been notable advances in the treatment of diseases of the blood These matters are recorded in the new book The liver treatment of pernicious anemia is briefly given, the favorable effect of mercury quartz lamp therapy on purpura hemorrhagica is mentioned There is a table giving the results of splenectomy in a total of 1,349 cases distributed among thirteen conditions The physiology of the pituitary body is ably summarized in about eight pages Much space is devoted to diseases of the thyroid A valuable section is entitled "Important Advances of the Last Decade in Our Knowledge of Diseases of the Kidney" The authors who have contributed to this, as to the other volumes in the series, are eminent men in their fields

Die chirurgische Behandlung der Gehirntumoren Eine klinische Studie Von Dr Herbert Olivecrona Privatdozent Oberarzt an der chirurgischen Universitatsklinik im Seraphimerkrankenhaus Stockholm Paper Price 27 marks. Pp 344 with 228 illustrations Berlin Julius Springer 1927

This monograph represents a thorough study of 105 intracranial tumors, seventy-five of which were verified microscopically on operation or at necropsy Of the remaining thirty, twelve were classed as suggestive of tumor and eighteen as unverified This classification of his material illustrates the influence of Cushing on Olivecrona's clinic, and it is obvious throughout the entire work. Perhaps in no other field of surgery has the United States exerted such a commanding influence The work adds nothing new to our ideas of neurologic surgery It is unfortunate that it does not include an attempt to correlate clinical and pathologic pictures because the future progress in neurologic surgery certainly lies in that direction. It is without any doubt the most thorough report on a clinical study of intracranial tumors that has come from a continental surgeon and speaks volumes for the ideals and ambitions of the author

A Text Book of Therapeutics Including the Essentials of Pharmacology and Materia Medica By A A Stevens A.M M D, Professor of Applied Therapeutics in the University of Pennsylvania Seventh edition Cloth Price $6 50 net Pp 758 Philadelphia W B Saunders Company 1927

The seventh edition of a work of established value requires little comment The book is in three essential divisions The first is an introductory section of thirty-two pages containing material on the composition and preparation of drugs incompatibility, methods of administration and conditions modifying the effects of drugs The second great section (491 pages) is entitled "Drugs" In this the subject matter is grouped according to pharmacologic effect The same section contains a division of thirty-four pages dealing with remedial measures other than drugs The third section (195 pages), which is on "Applied Therapeutics" gives the treatment of the various diseases and contains a number of prescriptions "The names and composition of the various official preparations have been made to conform with those of the Tenth Decennial Revision of the U S Pharmacopeia which became effective, January, 1926 References to the following drugs and remedial measures appear for the first time barium ephedrine, ethylene, butyn, sulpharsphenamine, tryparsamide, stovarsol, thyroxin, insulin, amydopyrine, parathyroid hormone, bismuth potassium tartrate, mercuric oxycyanide, flumerin novasurol (merbaphen) hexylresorcinol (caprokol), gentian violet scarlet fever toxin and antitoxin, erysipelas streptococcus antitoxin, medical diathermy, transfusion of blood, and heliotherapy'

Poliomyelitis with Especial Reference to the Treatment By W Russell MacAusland M D Surgeon In Chief Orthopedic Department, Carney Hospital Boston Cloth Price $5 50 net Pp 402 with 173 illustrations Philadelphia Lea & Febiger 1927

This is a well written and complete exposition of the present-day status of the subject of infantile paralysis, especially from the standpoint of treatment It is a modern comprehensive account of the disease one that presents practically all its phases, especially the principles of treatment The greatest progress has been made in the methods of treatment and particularly in the orthopedic field Deformity can now be prevented in nearly every instance The return of function can be hastened by proper treatment of the involved areas Finally, by the use of surgical procedures the wearing of cumbersome apparatus may be obviated in the majority of cases From the large number of operative procedures that have been devised for the relief of paralytic conditions, the author has selected those measures that have stood the test of time and can be accepted as standard He emphasizes the great importance of the prevention of the development of deformities and the necessity of their early correction when they have occurred When the value of these principles is impressed on the minds of all medical men the number of deformities in infantile paralysis will be reduced to a minimum The possibility of the restoration of function to paralyzed limbs is greater today than ever before, thanks to available therapeutic and operative measures The author believes it is feasible that a serum test might be worked out and made on children of the most susceptible age to determine the possibility of establishing individual susceptibility He believes that there is little doubt that human carriers play a part in the diffusion of poliomyelitis since the virus has been proved to exist on the mucous surfaces He states that there have been instances pointing to foodstuffs as carriers of the infection Concerning the various types of serum he states that at present it is impossible to judge the efficacy of any kind of serum whether normal or immune in form or of animal or human nature The prevention of deformity and the correction of deformity as soon as recognized are the most important factors in the treatment of infantile paralysis Since the etiologic factors that enter into the formation of deformity are known and means are at hand to prevent and correct malposition, few cases of structural deformity should ever develop One must be on the alert for the occurrence of deformity at all times As soon as recognized, at whatever stage of paralysis, it should be corrected Mechanical means, manipulative measures and operative treatment should be used as indicated This book should be of great value to the general practitioner, who is the one who usually sees these cases first and whose judgment determines to a marked degree the ultimate result of recovery of function It is a valuable book to the pediatrician, the neurologist and the orthopedic surgeon

Nerve Tracts of the Brain and Cord Anatomy Physiology Applied Neurology By William Keiller F R C S Professor of Anatomy and Applied Anatomy University of Texas Cloth Price $8 Pp 456 with illustrations New York Macmillan Company 1927

This book is stated to be the result of twenty years' experience in teaching anatomy of the brain and cord in such a manner as to enable the students to approach nervous diseases thinking in terms of anatomy physiology and pathology, as applied to the nervous system Such a manner cannot be commended too highly The ordinary wide separation between the teaching of anatomy physiology and clinical neurology is responsible for many of the delusions relating to the difficulty of this subject which most students inherit Part I supplies a laboratory manual for the study of the nerves and tracts in the central nervous system Parts II and III "form the basis of a course of thirty lectures giving in part II a summary of the anatomy and physiology of the nerve tracts and in part III the leading features of the better known nervous diseases correlating their symptomatology with anatomical, physiological and pathological data There is necessarily considerable repetition of material in parts I and II The author has attempted with considerable success, to correlate the most recent clinical and physiologic research with his anatomic description The author's zeal in this direction at times permits the introduction of too many controversial and at present unconfirmed theories for undergraduate consumption For example p 192 The pyramidal rigidity in the legs is extensor in type, and is due to the weakness of the flexors and to the postural action of the cerebellum' Muscle tone and decerebrate rigidity are described without any reference to the monumental work of Magnus and his school There is a general acceptance of the teaching of the English school of neurology In the section of applied neurology, perhaps properly the space apportioned to a disease is not related directly to its frequency and importance The clinical cases are described, for the most part from the literature and therefore do not permit of the same critical comparison as if examined by the author More than a hundred illustrations are grouped together in the back of the book References on various pages to a large number of these do not permit easy reading or comfortable study The illustrations are indexed by number, opposite each one are the numbers of the pages on which the text refers to the illustrations In some instances as many as forty-two page references are listed against an illustration, including pp 12 to 225 (fig 66, transverse section through upper end of pons and inferior colliculi) One would be forced to read practically the entire book in order to study this illustration It is feared that the undergraduate student would be greatly discouraged by such a requirement

Affections of the Stomach By Burrill B Crohn M D Associate Attending Physician to the Mt Sinai Hospital New York City Cloth Price $10 net Pp 902 with 361 illustrations Philadelphia W B Saunders Company 1927

Here is a much desired book on diseases of the stomach It is practical and unattended by any frills that might represent the author as riding a particular hobby Proper stress is laid where it should be There is a concise description of the anatomy and physiology of the stomach, and laboratory, physical and roentgenologic methods of examination The author leaves little doubt as to his opinion, although he is not loath to give the opinions of others There are extensive citations from the literature The author's extensive experience with ulcer reflects itself in the masterly way in which the subject is portrayed In collaboration with Dr Berg on the surgical treatment the author emphasizes the trend of resection replacing gastro-enterostomy as the best way of coping with this difficult subject With Dr Kardiner, the nervous disturbances of the stomach are outlined in an understandable fashion Dr Samuel J Goldfarb, together with Dr Crohn, contribute to the subject of radiography of the stomach in the same excellent manner The volume as a whole is profusely illustrated with diagrams and colored reproductions

Clinical Case Taking *Supplement to Methods in Medicine* By George R Herrmann M D Ph D Assistant Professor of Medicine, Tulane University Cloth Price $1 50 Pp 90 with illustrations St Louis C V Mosby Company 1927

While small, this book describes extensively the methods of eliciting histories and making physical examinations Its value seems to lie in the fact that every possible symptom can be elicited, if it is there, by following the method of approach suggested In this complexity, however, its use is limited to the beginner, particularly the intern who has the time to take hours for writing a history By persistence he will become proficient in envisaging every angle of a clinical case and later find that he can get along without its help

The Mind and Its Mechanism With Special Reference to Ideo Motor Action Hypnosis Habit and Instinct and the Lamarckian Theory of Evolution By Paul Bousfield M R C S L R C P and W R Bousfield K C F R S Cloth Price $4 Pp 224 New York E P Dutton & Company 1927

The mechanism of mental activity has long puzzled scientists and yielded little more than many tempting, though unproved, theories This essay presents an unusual point of view The authors formulate the hypothesis that there is an immaterial structure interposed between the material brain and the mind This intangible, intermediate brain or "psychic organ' is made of psychoplasm, the psychic equivalent of protoplasm The ultimate constituent particles, the "psychons" are immeasurably smaller than electrons or protons The mind of man is, according to this theory, made up of two correlated sets of mechanisms, the material brain with its machinery for receiving sensory impressions, and the psychic brain adapted to synthesize these impressions with psychograms from the memory and present them in consciousness This hypothesis, with its supporting evidence, may interest physiologists, psychologists and biologists

El psico analisis Por el Dr Emilio Mira Paper Price 4 Ptas Pp 162 Barcelona Arnau de Vilanova 1927

Dr Mira reviews the freudian principles of psychoanalysis, of the libido and of the interpretation of dreams The modifications of the libido by Jung and Adler are given Six tables are included illustrating the different types of word stimuli used in the technic of psychoanalysis

Books Received

Books received are acknowledged in this column and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender Selections will be made for more extensive review in the interests of our readers and as space permits Books listed in this department are not available for lending Any information concerning them will be supplied on request

The Pneumothorax and Surgical Treatment of Pulmonary Tuberculosis By Clive Riviere M D F R C P Physician City of London Hospital for Diseases of the Heart and Lungs Second edition Cloth Price $3 25 Pp 311, with 16 illustrations New York Oxford University Press 1927

New edition of a special work of well merited popularity

Bacteriology and Surgery of Chronic Arthritis and Rheumatism with End Results of Treatment By H Warren Crowe D M B Ch M R C S, and Herbert Frankling C B E M R C S Cloth Price $9 Pp 187 with illustrations New York Oxford University Press 1927

Record of special research on arthritis with handsome illustrations

Clinical Researches in Acute Abdominal Disease By Zachary Cope B A M D M S Senior Surgeon to Out Patients St Mary s Hospital Second edition Cloth Price, $3 50 Pp 214 with 44 illustrations New York Oxford University Press 1927

Companion book to author's special volume on "The Acute Abdomen"

Medical Insurance Examination *Modern Methods and Rating of* Lives for Medical Practitioners and Insurance Officials By J Paterson MacLaren M A B Sc M B Cloth Price $5 75 Pp 312 with illustrations New York William Wood & Company 1927

Technic of insurance examinations and their interpretation

Growing Up The Story of How We Become Alive Are Born and Grow Up By Karl de Schweinitz Cloth Price $1 75 Pp 111, with illustrations New York Macmillan Company 1928

Beautifully printed story of generation and reproduction

Shaken by the Wind A Story of Fanaticism By Ray Strachey Cloth Price $2 50 Pp 317 New York Macmillan Company 1928

Poorly written novel dealing intimately with the psychology of evangelism and conviction

Diagnosis and Treatment in Diseases of the Lungs By Frank E Tylecote M D D P H F R C P Honorary Physician to the Manchester Royal Infirmary and George Fletcher M A M D M R C P Assistant Tuberculosis Officer Lancashire County Council Cloth Price $2 25 Pp 270 New York Oxford University Press, 1927

Recent Advances in Tropical Medicine By Sir Leonard Rogers C I E M D B S Physician and Lecturer London School of Tropical Medicine Cloth Price $3 50 Pp 398 with 12 illustrations Philadelphia P Blakiston s Sons & Company 1928

Questions physiologiques d actualité Par Leon Binet professeur agrege de physiologie a la Faculte de medecine de Paris Paper Price 18 francs Pp 226 with 55 illustrations Paris Masson & Cie 1927

European Sporting Activities Amsterdam Cologne Edited by Karl Kiesel and Walter Hulck Paper Pp 158 with illustrations Bremen University Travel Department of the North German Lloyd 1928

Third Annual Report of the Pasteur Institute Calcutta for the Year 1926 Government of Bengal School of Tropical Medicine and Hygiene Paper Price 1s 9d net Pp 18 Calcutta 1927

Précis de parasitologie Par E Brumpt professeur a la Faculte de medecine de Paris Fourth edition Cloth Price 100 francs Pp 1452, with 800 illustrations Paris Masson & Cie 1927

Public Health Statutes 1927 Supplement Acts of the 1927 General Assembly Relating to Public Health Paper Pp 80 Hartford *Connecticut State Department of Health 1928*

Spray Painting in Pennsylvania Commonwealth of Pennsylvania Department of Labor and Industry Special Bulletin No 16 Paper Pp 202 with illustrations Harrisburg 1926

Annual Report of the French Benevolent Society of New York for the Year Ending September 30 1927 Paper Pp 116 with illustrations New York 1927

Report of the Registrar General Board of Health of the Territory of Hawaii Bureau of Vital Statistics for the Fiscal Year Ended June 30 1927 Paper Pp 115 Honolulu 1927

Memoria anual correspondiente a 1926 Paper Pp 78, with illustrations Buenos Aires Instituto de Medicina Experimental 1927

Medicolegal

Injury to Eye Resulting in Cataract and Loss of Lens

(Giglio v Dorfman & Kaminsky et al (Conn) 138 Atl R 448)

The Supreme Court of Errors of Connecticut says that the compensation commissioner found that the claimant in this proceeding under the workmen's compensation act received an injury arising out of and in the course of his employment his left eye being pierced by a nail As a result of the injury a traumatic cataract developed in the eye and was removed by an operation, which also required the removal of the lens of the eye In addition to compensation of $21 a week for the period of total incapacity, the commissioner decided that the specific injury should be compensated for at $21 a week for 104 weeks for the reduction in the injured eye to 10 per cent or less of normal vision with glasses The commissioner found that by using a glass made for that purpose the claimant could get 20/30 s vision in the injured eye which is a loss of about 7 or 8 per cent of its normal vision On motion to have the meaning of the terms '20/30 s vision and binocular vision ' as shown by the medical testimony added to the finding, the following addition is made The term 20/30 s' with reference to eye vision means that the claimant with correcting lenses, can read a line at 20 feet that he should normally read at 30 feet Binocular vision means that the images found by each eye separately overlap in the brain and are perceived as a single image It is the ability to fuse, in a plane, perception in each eye There is an image formed in the macula, the most sensitive and important part of the retina in each eye, and if the eyes diverge for example if the individual has paralysis of one muscle he perceives two images where there is only one because he is not able to overlap the two images in the brain, he no longer has binocular vision

Two paragraphs of the commissioner's findings stated (8) That the claimant could not use the uninjured eye and the injured eye with the glass at the same time (11) That with any pair of glasses which gave the claimant more than one tenth of vision in the injured eye he could not use the two eyes at the same time, so that he was at all times for practical purposes, a one-eyed man He must always dissociate the vision of the two eyes For those two paragraphs the following should be substituted

> (8) While he cannot use the eyes together he probably does associate the two eyes He has 20/30 s vision in the injured eye Reading is a different matter that is a matter of focus
>
> (11) He has lost binocular or stereoscopic vision but there are people without injury who use both eyes single and so do not have actual stereoscopic vision This man probably uses both eyes with things on one side and for things on the other side of his field of vision he uses them separately The eye is not useless for there are several other use for the eye besides binocular vision e g the field of vision—seeing objects from the side—and color vision He can still use the eye for these purposes If he lost the injured eye he would still have the use of the uninjured one and if he lost the uninjured one he would not be blind and could still follow a useful occupation

The statement of a physician as to the discussion and conclusions at a meeting of certain members of the state medical association was not such a subordinate fact as to justify inclusion in the finding

The loss of the lens was a 'loss of a substantial part' of the eye, within the meaning of section 5352 of the general statutes, and an award might therefore properly be made within the terms of that provision, and based on a correct finding of the operative facts This court cannot take the view that the eye was worse than useless

The requirement that the compensation be based on the injury to one eye only raises a question essentially medical and it is certainly not free from difficulty The functions of one eye must be differentiated from those of the two eyes acting in conjunction The injury is to one eye only, and it becomes necessary, the Connecticut statute provisions being what they are, to define the functions of that one eye and estimate the loss, or the extent of the loss of each of those uses which the injury has caused Among these uses there should be considered the part which one eye plays in giving field vision color vision and binocular vision which the claimant enjoyed before the injury The commissioner s conclusion will necessarily be based on expert medical evidence, and that evidence should be given with this distinction clearly in mind There are certain conditions which naturally have their bearing on the result such as liability that the other eye may sometime be lost, rendering the value of the defective eye something quite different from its present value A question of this nature should be presented with the greatest possible care to the end that the commissioner may be able to find with clearness and in sufficient detail the facts from the medical opinions, together with the grounds on which the opinions rest

Procedure in Illinois After Revocation of License

(Carter Shelton Director of Department of Registration and Education et al (Ill) 158 N E R 126)

The Supreme Court of Illinois says that the department of registration and education revoked the license of Dr Carter as a physician and surgeon June 21 1926 He sued out a writ of certiorari from the superior court of Cook County to review the order, and that court entered an order suspending the operation of the revocation during the pendency of the writ December 4 the cause was heard and the court set aside its order of suspension and dismissed the writ of certiorari December 22 Dr Carter filed a praecipe for a writ of error with the clerk of the supreme court and a writ of error and scire facias were issued returnable to the February term No order of the court was made for the issue of the writ or was asked for The medical practice act provides in section 17 (Smith-Hurd Rev St 1925 c 91 sec 16b) for the procedure in cases of revocation or suspending of licenses Paragraph (b) provides that the suspension or revocation of a license may be reviewed by the circuit court or the superior court of Cook County by writ of certiorari and paragraph (c) that judgments and orders of such court shall be reviewed only by the supreme court and only upon writ of error, which the supreme court in its discretion may order to issue only upon showing of probable error if applied for not later than the second day of the first term of the supreme court following the rendition of the judgment or order sought to be reviewed but if the first day of said term is less than thirty days from the rendition of said judgment or order then application for said writ of error may be made not later than the second day of the second term following rendition thereof, but not otherwise ' Since no application was made to the court for the issue of the writ it was improvidently issued, and the court was without jurisdiction in the cause The writ of error was therefore dismissed

Action Under Death by Wrongful Act Statute

(Stejskal v Darrow (N D) 215 N W R 83)

The Supreme Court of North Dakota says that this was an action for damages which the plaintiff claimed under the death by wrongful act statute, for the death of an adult unmarried daughter At about 5 p m on a Thursday the defendant a practicing physician took the plaintiff's daughter to a hospital and tried to make arrangements to have her received at the hospital She was then apparently very ill and suffering great pain The defendant told the hospital authorities that he believed that she had had a miscarriage The hospital was unable to receive her, but the defendant was advised that one of the other hospitals would The defendant then left with the patient and returned to his office He remained with her in his office until Sunday night He put her on the office couch and covered her with an army blanket The woman was very ill, but he did not administer treatment save to give her a little water On Sunday night she was unconscious and he thought nothing could be done for her so he left her there and went home When he returned on Monday morning he found her dead A necropsy disclosed that the cause of her death was peritonitis, hemorrhage, and shock brought about by a rupture of the uterus The rupture was due to instrumental interference with pregnancy She had been about three months pregnant No evidence was offered on behalf of the defendant The jury by its special verdict found that the woman had gone to the defendant for treatment and that he had so negligently treated and cared for her that death resulted

The supreme court thinks that the record fully sustained the findings of the jury respecting the death of the woman and the cause thereof Regardless of whether the defendant performed the operation on her, which the testimony unquestionably showed was performed by some one, it clearly appeared that immediately before or after it was performed she sought professional treatment of the defendant, and that thereafter she remained in his care until her death It was equally clear that the defendant was guilty of the grossest negligence in the care given and the treatment administered to her, and that the jury was well justified in finding that her death resulted as a consequence of this negligence

The defendant urged that the woman was over age (30 years old), that she was under no obligation to furnish work or services to the plaintiff, that the plaintiff was well-to-do and not dependent on her, that in any event the extent and value of such work and services as the plaintiff might receive from his daughter were altogether conjectural and speculative But the court is of the opinion that the evidence was sufficient to sustain the finding of the jury that the plaintiff suffered injury on account of the death of his daughter by way of loss of work and services which he was reasonably entitled to expect to receive from her in the amount of $3,000 In such an action as this he was also entitled to recover on account of the reasonable and proper funeral expenses incurred and paid by him But in an action for damages for death by wrongful act a father cannot recover on account of loss of the society and companionship of an adult unmarried daughter

Finding of Total Incapacity from Diabetes Set Aside

(Texas Indemnity Ins Co v James (Texas) 297 S W R 254)

The Court of Civil Appeals of Texas says that the plaintiff brought this suit to set aside an award of the industrial accident board in favor of the defendant, who was an employee of a pipe line company that carried insurance with the plaintiff, and who was injured in the course of his employment It was undisputed that the defendant was suffering from diabetes, and that before the injury he had not been thus afflicted The plaintiff's assignments attacking the submission of the issue of total incapacity and the finding of the jury that the defendant was totally incapacitated are overruled The evidence raised the issue and this court thinks that it was sufficient to support the finding of total incapacity at the time of the trial It was sufficient, also to show that the defendant's diabetic condition was caused by the injury

But assignments challenging the submission of the issue of permanent total incapacity and the sufficiency of the evidence to support the jury's finding of permanent total incapacity are sustained Several physicians testified, all of them at the instance of the defendant, and none of them testified that his total incapacity was permanent—there was no testimony to that effect It was true that all of the physicians testified that the defendant had diabetes, and that diabetes was regarded as incurable, but they also testified that when diabetes is treated with insulin and the patient put on proper diet the disease quickly yields to the treatment and the patient usually became as normal as most people The defendant admitted that he had been advised by the physicians that he had diabetes, but that he had not been treated for the malady because he said, he was not financially able to do so However, if the issue of permanent total incapacity could be said to have been raised by the evidence, then, in the opinion of this court the finding of the jury of permanent total incapacity was so against the weight of the evidence as to be wrong and could not be allowed to stand All the evidence was to the effect that, when diabetes is treated with insulin and the patient put on proper diet, relief followed, and the person was restored to a normal condition In this state of the evidence the finding of permanent total incapacity must be set aside While total incapacity may exist at the time of the trial, and the circumstances may indicate that it will continue for 401 weeks, yet it may not be permanent, that is, unchanging or never ending, the proof should show the incapacity to be total and permanent

Society Proceedings

COMING MEETINGS

Alabama, Medical Association of the State of Birmingham April 17 20 Dr D L Cannon 519 Dexter Avenue Montgomery Secretary

American Association for Thoracic Surgery Washington D C April 30 May 2 Dr Ethan Flagg Butler Sayre Pa Secretary

American Association of Anatomists Ann Arbor Mich April 5 7 Dr Lewis H Weed Johns Hopkins Medical School Baltimore Secretary

American Association of Genito Urinary Surgeons Washington D C April 30 May 2 Dr H L Kretschmer 122 S Michigan Avenue Chicago Secretary

American Association of Pathologists and Bacteriologists Washington D C May 1 2 Dr H T Karsner 2109 Adelbert Road Cleveland Secretary

American Bronchoscopic Society Washington D C April 30 Dr Louis H Clerf 128 South 10th Street Philadelphia Secretary

American Climatological and Clinical Association Washington D C May 1 2 Dr A K Stone Auburn Street Framingham Center Mas Secretary

American Dermatological Association Washington D C April 30 May 2 Dr C Guy Lane 416 Marlborough Street Boston Secretary

American Gastro Enterological Association Washington D C April 30 May 1 Dr W J Mallory 1720 Connecticut Avenue N W Washington D C Secretary

American Gynecological Society Washington D C April 30 May 2 Dr Floyd E Keene Medical Arts Building Philadelphia Secretary

American Laryngological Association Washington D C May 1 3 Dr G M Coates 1721 Pine Street Philadelphia Secretary

American Laryngological Rhinological and Otological Society Washington D C May 3 5 Dr R L Loughran 33 East 63d Street New York Secretary

American Ophthalmological Society Washington D C April 30 May 2 Dr Emory Hill Professional Building Richmond Va Secretary

American Otological Society Washington D C April 30 May 1 Dr T J Harris 104 East 40th Street New York Secretary

American Pediatric Society Washington D C April 30 May 2 Dr H C Carpenter 1805 Spruce Street Philadelphia Secretary

American Pharmacological Society Ann Arbor Mich April 12 14 Dr E D Brown University of Minnesota Minneapolis Secretary

American Physiological Society Ann Arbor Mich April 12 14 Dr W J Meek Science Hall University of Wisconsin Madison Secretary

American Society of Biological Chemistry Ann Arbor Mich April 12 14 Dr D W Wilson University of Pennsylvania Medical School Philadelphia Secretary

American Society of Clinical Investigation Washington D C April 30 Dr J T Wearn *Boston City Hospital* Boston Secretary

American Society of Tropical Medicine Washington D C May 1 2 Dr Benjamin Schwartz P O Box 131 Pennsylvania Avenue Station Washington D C Secretary

American Surgical Association Washington D C April 30 May 2 Dr Lincoln Davis 205 Beacon Street Boston Secretary

Arizona State Medical Association Tucson April 19 21 Dr D F Harbridge Goodrich Building Phoenix Secretary

Arkansas Medical Society El Dorado May 1 3 Dr W R Bathurst, 810 Boyle Building Little Rock Secretary

Association of American Physicians Washington D C May 1 3 Dr J H Means Massachusetts General Hospital Boston Secretary

California Medical Association Sacramento April 30 May 3 Dr Emma W Pope 593 Market Street San Francisco Secretary

Congress of Physicians and Surgeons of North America Washington D C May 1 2 Dr W R Steiner 646 Asylum Avenue Hartford Conn Secretary

Federation of American Societies for Experimental Biology Ann Arbor Mich April 12 14 Dr E D Brown University of Minnesota Minneapolis Secretary

Florida Medical Association Tampa April 3 4 Dr Shaler Richardson 111 West Adams Street Jacksonville Secretary

Georgia Medical Association of Savannah May 9 11 Dr A H Bunce 139 Forrest Avenue N E Atlanta Secretary

Illinois State Medical Society Chicago May 8 11 Dr Harold M Camp Lahl Building Monmouth Secretary

Iowa State Medical Society Cedar Rapids May 9 11 Dr Tom B Throckmorton Bankers Trust Building Des Moines Secretary

Kansas Medical Society Wichita May 8 10 Dr J F Hassig 804 Huron Building Kansas City Secretary

Louisiana State Medical Society Baton Rouge April 10 12 Dr P T Talbot 1551 Canal Street New Orleans Secretary

Maryland Medical and Chirurgical Faculty of Baltimore April 24 26 Dr John T King Jr 1211 Cathedral Street Baltimore Secretary

Mississippi State Medical Association Meridian May 8 10 Dr T M Dye Clarksdale Secretary

New Mexico Medical Society Albuquerque May 10 11 Dr L B Cohenour 219 West Central Avenue Albuquerque Secretary

North Carolina Medical Society of the State of Pinehurst April 30 May 2 Dr L B McBrayer Southern Pines Secretary

Ohio State Medical Association Cincinnati May 1 3 Mr Don K Martin 131 East State Street Columbus Executive Secretary

Pacific Coast Oto Ophthalmological Society Santa Barbara April 18 20 Dr Walter F Hoffman 817 Summit Avenue Seattle Secretary

South Carolina Medical Association, Columbia April 17 19 Dr E A Hines Seneca Secretary

Tennessee State Medical Association Nashville April 10 12 Dr H H Shoulders Lambuth Building Nashville Secretary

Texas State Medical Association of Galveston May 8 10 Dr Holman Taylor Medical Arts Building Fort Worth Secretary

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to The Journal in America for a period of three days No foreign journals are available prior to 1921 nor domestic prior to 1923 Periodicals published by the American Medical Association are not available for lending but may be supplied on order Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested)

Titles marked with an asterisk (*) are abstracted below

American Journal of Pathology, Boston

4 1 90 (Jan) 1928

Pathology of Bilharziasis H S Hutchison, Tanta Egypt —p 1
*Roentgenographic Study of Circulation in Normal and Pathologic Kidney P S Graham Philadelphia —p 17
*Etiology and Pathology of Cystic Pyelitis Cystic Ureteritis and Cystic Cystitis. H D Morse Rochester, Minn —p 33
*Malignant Tumor Simulating Bone Marrow S Warren Boston —p 51
Ectopic Chorionepithelioma E de Zalka Budapest Hungary —p 59
Muscle Hemoglobin in Human Autopsy Material W W Woodruff and G H Whipple Rochester, N Y —p 75
Epithelial Cyst of Hypophysis M Fulstow Boston —p 87

Roentgenographic Study of Circulation of Kidney—Graham finds that the injection of the renal vessels with a radiopaque suspension, and subsequent roentgenography of the kidney, have proved the accepted anatomic conception of the arterial tree in the normal kidney to be correct Such examination is of definite value in the study of thrombosis of vessels and infarcts A comparison of the roentgenographic appearance of the arterial tree with the urea nitrogen retention in the blood has failed to show a direct relationship between moderate arteriosclerosis per se and impaired renal function Acute nephritis, acute degenerative parenchymatous changes in the kidney tissue, and passive congestion have not given a distinctive picture on the roentgenograms

Etiology of Cysts of Kidney, Ureter and Bladder—Morse's study fails to reveal evidence to support the secretory theory of the formation of these cysts They are formed by degeneration of the central cells of the epithelial cell nests

Malignant Tumor Simulating Bone Marrow—Warren proposes the name hemocytoblastoma for a tumor resembling bone marrow, apparently primary either in the pelves of the kidneys or in the retroperitoneal fat tissue, which was found in a woman, aged 42, without evidence of leukemic involvement

Ectopic Chorionepithelioma of Ovary and Liver—Two cases of ectopic chorionepithelioma are reported by de Zalka one a primary chorionepithelioma of the ovary the other of the liver In the first case no other genital focus existed Metastatic nodules were found in the skin, lungs, kidneys liver, pancreas, brain and left temporal bone In the second case no primary genital tumor was found, and but few and small metastases were observed in the lungs and in the left kidney, the liver, however, was considerably enlarged and contained huge masses of histologically typical chorionepitheliomatous tissue No teratomatous elements were demonstrable Both cases are regarded as being ectopic chorionepitheliomas initiated by the transportation in a retrograde manner of chorionic elements through the inferior vena cava

American Journal of Public Health, New York

18 1 130 (Jan) 1928

Has Prohibition Improved Public Health? L I Dublin —p 1
*"Common Cold" V S Cheney, Chicago —p 15
Relation of Public Health and Clinical Laboratories T G Hull Springfield Ill —p 33
Chicago's Tuberculin Testing Program H N Bundesen and H C Becker Chicago —p 36

Cause and Treatment of Common Cold—Cheney asserts that he has been able to induce all the symptoms of a cold, in varying degree from a simple coryza to that of grip, by the induction of an artificial acidosis through the administration of ammonium and calcium chlorides The degree of severity of the symptoms was in direct ratio to the degree of acidosis induced The symptoms rapidly subsided on the administration of sodium bicarbonate in large doses by mouth and by rectum If the disease is attacked when there is a beginning dryness in the pharynx or a slight coryza, or congestion of the mucous membrane of the nose and alkalization is instituted by giving 60 grain (4 Gm) doses of sodium bicarbonate every two hours for three doses, when usually the urine is alkaline to litmus paper, a 'cold' can always be aborted At the time of taking the treatment, the usual meal should be dispensed with or should consist of milk and some cereal, or soup or broth If the bowels are constipated, they should not be moved by a cathartic or laxative but the lower bowels should be relieved by a soap suds enema When a cold has advanced to the stage at which there is a hoarseness and a profuse coryza, or when this condition has advanced to what is generally termed 'a cold," Cheney gives an initial dose of 60 grains (4 Gm) of sodium bicarbonate, 30 grains (2 Gm) every two hours for six doses, then 20 grains (1 3 Gm) every three hours during the waking period until the cold is checked The administration of the sodium bicarbonate should always be in or followed by a large glass of hot water Locally he sprays the nose and throat with an alkaline solution, 1 drachm (4 Gm) of sodium bicarbonate to 1 pint of water morning and night If the bowels are constipated, an enema of soap suds will relieve the lower bowels

Annals of Internal Medicine, Ann Arbor, Mich

1 *203 272 (Oct) 1927*

*Insulin and Carbohydrate Tolerance W M Brace Ann Arbor —p 203
Conservative Treatment of Gangrene Complicating Diabetes J E Harbinson Woodland Calif —p 212
*Relation of Trauma to Cardiac Disease L A Levison Toledo Ohio —p 227
Basal Blood Pressure in Normal F N Miller W Osborne and R C Romig Eugene Ore —p 231
Torula Infection in Man O Berghausen Cincinnati —p 235
Roentgen Ray Treatment of Goiter G W Grier Pittsburgh —p 241
Aneurysm of Renal Artery E Weiss Philadelphia —p 247
Value of Scholarship C G Heyd New York —p 251

Insulin and Carbohydrate Tolerance—Brace concludes that there has been no evidence advanced which shows that the daily administration of insulin over long periods has been followed by a gain in the total dextrose tolerance of a diabetic patient which could not be explained by desugarization or recovery from infection A failure to obtain evidence of improvement in the tolerance for dextrose in five patients who had received weighed, high fat, low protein and low carbohydrate diets and daily insulin over periods varying from thirty-two to forty-five months has given no ground for believing that insulin is capable of effecting a cure or a partial cure of human diabetes mellitus Insulin has shown no more ability to arrest the downward progress of the disease than the earlier treatment without the drug Each of these patients has lost tolerance during the period of treatment with insulin

Relation of Trauma to Cardiac Disease—Levison reports the case of a healthy man who sustained a severe crushing of the chest when caught between two trucks Later he complained of severe pain in the chest and on examination an auricular fibrillation was discovered The man recovered completely from this condition Levison is convinced that it was of traumatic origin

Torula Infection of Tongue—A case of ulceration of the tongue is reported by Berghausen, in which *Torula histolytica* was isolated from the lesion The marked skin reaction following the subcutaneous injection of a boiled aqueous extract of a culture of the organism indicates that a state of hypersensitiveness existed Complications in the form of a mottled infiltration of the parenchyma of the lung and enlargement of the spleen were present The blood culture was negative Unfortunately, permission was not granted to perform a necropsy to determine the character of the lesion in the lungs and spleen At no time was it possible to obtain a specimen of sputum to examine for tubercle bacilli The patient had never worked in an atmosphere containing dust so that the changes in the lung cannot be attributed to siderosis Temporary improvement followed the employment of neoarsphenamine intravenously Local antiseptic measures in the form of the various dyes, arsphenamine and sodium perborate were of no avail The exposure to the roentgen ray and radium was followed by such a reaction that the patient did not care to have these repeated No improvement followed their use Quinine sulphate and sodium iodide internally over a prolonged period seemed to be of no benefit Death was due to inanition, the patient steadily losing in weight and finally refusing food

1 67 462 (Dec) 1927

- *Action of Atropine and Calcium and Parathyroid Preparations in Arterial Hypertension H O Altnow Minneapolis and J P O Hare Boston —p 367
- Pathologic and Clinical Significance of Congenital One Sided Kidney Defect with Presentation of Three New Cases of Agenesia and One of Aplasia C H Fortune Ann Arbor —p 377
- Embryohormonic Relations of Thyroid Gland to Ectodermal Tissues R C Moehlig Detroit —p 400
- Effect of Pituitary Administration on Growing Dogs W G Downs Jr, Ann Arbor —p 412
- Alimentary Canal of Medical Student Radiographic Studies T W Todd Cleveland —p 420
- Transfusion in Preoperative and Postoperative Conditions with Anemia D D Stofer Kansas City Mo —p 422
- Laboratory Service in Civilian Hospitals H I Cosline Vicksburg Miss —p 429

Effect of Atropine, Calcium and Parathyroid on Arterial Hypertension—Altnow and O'Hare treated eleven cases of hypertension with calcium chloride 1 Gm and atropine 0 00025 Gm four times a day for from three to four weeks In six of these cases it had no effect on the blood pressure In five other cases it might be credited with having some slight effect Parathyroid extract, 0 0065 Gm by mouth was used in three cases of hypertension over a sufficiently long period to obtain its action without any apparent effect on the blood pressure Parathyroid extract Hanson was used in three cases in increasing daily dosage until a maximum of 0 039 Gm was given and this dosage was then maintained No constant immediate effect from the parathyroid was discernible The small variations that occurred were within normal limits of blood pressure variation In two of the three cases there did not appear to be any sustained depressor effect on the blood pressure

Transfusion in Severe Hemorrhage and Shock—Stofer asserts that transfusion is the most successful means of combating severe hemorrhage or shock yet devised both preoperative and postoperative In chronic secondary anemic patients, transfusion undoubtedly makes the patient a better operative risk and its use may be life saving The indications and limitations for preoperative and postoperative transfusions should be better understood and advantage taken of them more often

Archives of Dermatology and Syphilology, Chicago

17 153 292 (Feb) 1928

- *Intracutaneous Method of Treating Argyria A W Stillians and T K Lawless Chicago —p 153
- *Lymphogranulomatosis Cutis Hodgkin s Disease H E Miller San Francisco —p 156
- *Epilation with Thallium Acetate in Treatment of Ringworm of Scalp in Children B F Felden New York —p 182
- Fungi and Fungous Diseases III A Castellani New Orleans —p 194
- Use of Grenz (Infraroentgen) Rays in Dermatologic Conditions J J Eller and G Bucky New York —p 221

Intracutaneous Method of Treating Argyria—According to Stillians and Lawless, a mixture containing 0 25 per cent of potassium ferricyanide and 6 per cent of sodium thiosulphate injected intradermally quickly removes the bluish discoloration of argyria

Lymphogranulomatosis Cutis—Two cases of lymphogranulomatous infiltrations of the skin are reported by Miller One patient developed cutaneous nodules three and one-half years after the appearance of a generalized erythroderma that was originally considered pityriasis rubra (Hebra type) The second patient had a universal granulomatous infiltration of the skin that was diagnosed after examination of the microscopic changes in sections of the skin and a lymph node The observations on a patient with a large cell lymphosarcoma that simulated a mycosis d emblee or a 'chancre de lymphogranulomateux" are presented A patient with a small cell lymphosarcoma of certain lymph nodes and lymphogranulomatosis of others demonstrates the close relationship between the diseases of this group

Epilation with Thallium Acetate—A report of forty-seven children with trichophytosis of the scalp is made by Felden with thirty-six cures after one administration of thallium acetate by mouth 0 003 Gm per kilogram of body weight being given Epilation usually appears on the eighteenth day, is entirely spontaneous in approximately 50 per cent of the cases and has to be completed by the extraction of loose hairs with adhesive strips, which is entirely painless The epilation is not entirely dependable since there will be cases in which only partial results are obtained Local treatment, which consists of painting the scalp with 5 per cent tincture of iodine and applying a 10 per cent sulphur ointment daily should be continued throughout the entire period Particular attention should be paid to the remaining short, broken off hairs Patients with a marked discrepancy between weight and age are unfit for pure thallium treatment, the combined method consisting of one half or two thirds of the dosage of both the roentgen ray and thallium offers eventually a good outlook Thallium is strictly to be avoided in full dosage in adults and in children approaching puberty because of its serious toxicity Repetition of the thallium intake in less than two months is dangerous and is to be avoided The thallium should be taken on an empty stomach and should be dissolved in sugar water in the presence of the physician who must assure himself that undissolved salt does not remain in the glass Acute infections, which are generally debilitating and diseases of the kidneys are contraindications to the thallium medication

Archives of Neurology and Psychiatry, Chicago

19 201 376 (Feb) 1928

- Role of Dorsal Roots in Muscle Tonus S W Ranson St Louis —p 201
- *Concentric Periaxial Encephalitis J Balo Budapest Hungary —p 242
- *Abscess of Brain I B Diamond and P Bassoe Chicago —p 265
- Aphasia Study of Normal Control Cases G H J Pearson B J Alpers and T H Weisenburg Philadelphia —p 281
- Colloidal Gold Reactions with Spinal Fluids Contaminated with Blood H G Mehrtens H A Wyckoff and R M Davis San Francisco —p 296
- Analysis of Abnormal Posture of Head in Parkinsonism of Various Origins W M Kraus and N E Silverman New York —p 301
- *Sympathetic Paralysis I I Yakovleva D K Bogorodinsky and G M Freidovitch Tashkent U S S R —p 311
- Twenty Six Normally Possible Forms of Rotationally Induced Nystagmus J Favill Chicago —p 318
- Barbital (Veronal) Addiction P Work Denver —p 324
- Circumscribed Suppurations of Spinal Cord and Meninges Case of Subdural Abscess with Functional Recovery Following Operation A E. Bennett and J J Keegan Omaha —p 329

Concentric Periaxial Encephalitis—Balo describes an elective and isolated disease of the cerebral white matter which is characterized by the occurrence of foci varying in size from that of a lentil to that of a pigeon s egg and presenting gray softening and in a part concentricity In these foci the medullary sheaths are destroyed and the axis cylinders remain intact Proliferation of the neuroglia follows the destruction of the medullary sheaths, and mast glia cells occur which partly undergo degeneration and become the subject of gliophagia The concentric foci develop in such a manner that degenerated layers alternate with normal layers of white matter The changes about the vessels indicate the inflammatory character of the process Syphilis apparently does not play a part in the etiology Bacteriologic examination did not reveal any micro-organisms Intracerebral inoculation with material from the brain into rabbits did not transmit the disease One would infer from this that the causative agent is a lecithinolytic ferment that exercises its action from different foci at different intervals Among the diseases of the brain known to date, the condition in the case reported resembles acute multiple sclerosis and the encephalitis periaxialis diffusa of Schilder The disease differs from encephalitis periaxialis diffusa because of its focal character It differs from multiple sclerosis because in that condition both the brain and the spinal cord and both the gray and the white matter are affected The case reported resembles most the case of Barre Morin, Draganesco and Reys and the third case of Marburg described in his work on acute multiple sclerosis Balo suggests that the term leukoencephalitis periaxialis concentrica be used to designate the pathologic conditions described by him

Abscess of Brain—In one of the two cases reported by Diamond and Bassoe, the clinical picture resembled that of epidemic encephalitis, in the other, that of tumor of the brain

Sympathetic Paralysis — Two cases are reported by Yakovleva et al In the first case that of a healthy person, the blood pressure, the type of capillaries, the viscosity, the clotting and the blood sugar were equal in the arm and in the leg This is an instance of complete isotonia In the second case a transverse injury of the spinal cord, definite changes were noted In the somatic sphere this patient had a paraplegia in the sympathetic sphere he had a parahypertonia a parahyperglycemia etc The distribution of the symptoms is correspondingly similar

Boston Medical and Surgical Journal

197 *1439 1486 (Feb 2) 1928*

Clinical Observations on Well Patients R Fitz Boston—p 1439
Two Weeks Course for Commanding Officers and Executives Medical Field Service School Carlisle Barracks Pa L S Medalia Boston—p 1444
Intracranial Hemorrhage of New Born Relation to Hemorrhagic Diathesis B Burpee Manchester N H—p 1449

Endocrinology, Los Angeles

11 497 612 (Nov Dec) 1927

*Carbohydrate Metabolism in Hyperthyroidism H J John Cleveland—p 497
Pathology of Goiter A E Hertzler Halstead Kan—p 582
*Addison s Disease Without Pigmentation D G Ghrist and I G Rowntree Rochester Minn—p 589
Case of Physiologic Castration in Fowl H B Yocom and J B Flynn Portland Ore—p 593

Carbohydrate Metabolism in Hyperthyroidism—A report is made by John of a study of the carbohydrate metabolism in ninety two cases, together with a discussion of the pertinent literature He says that there is no dextrose tolerance curve specific for hyperthyroidism That is, a definitely diabetic type of curve may be present in a mild case of hyperthyroidism and a normal curve may be present in a very severe case of hyperthyroidism Thyroidectomy lowers the total metabolism and in consequence improves the carbohydrate tolerance In cases in which little or no improvement follows thyroidectomy, this is due to the fact that lack of proper diabetic treatment or insufficient treatment has followed the operation If diabetes develops after a thyroidectomy this is due either to other extraneous factors such as produce diabetes in other cases or to the fact that an insufficient amount of thyroid tissue has been removed In the latter case, when more of the gland is removed the diabetes is improved John believes that hyperthyroidism plays a fundamental etiologic role in the disturbances of endocrine equilibrium which constitute the diabetic syndrome Glycosuria and hyperglycemia (either fasting or, more often, two and one-half hours after a meal) are not uncommonly present in hyperthyroidism The presence of hyperglycemia two and one-half or more hours after a meal is an expression of an insufficient insulogenic function The intervention of the menopause in a case of hyperthyroidism may cause hypertrophy of the islands of Langerhans with the resultant cure of a coincident diabetes The glycogen depletion of hyperthyroidism increases the tendency to acidosis Patients with hyperthyroidism in whom a frank diabetic condition of severe type is not present but merely a mild degree of disturbance of the carbohydrate metabolism, John considers to be functional" diabetics The administration of thyroid preparations is not without danger It may precipitate hyperthyroidism, and may even produce diabetes In John's series of 100 dextrose tolerance tests in eighty-two cases of hyperthyroidism and ten cases of colloid goiter fasting glycosuria was present in nineteen cases and absent in eighty-one cases Sixty six per cent of the curves indicate an impaired tolerance and 34 per cent indicate a normal tolerance From these observations it would appear that the renal permeability is increased in the active stage of hyperthyroidism The renal threshold for dextrose was below 120 in 35 6 per cent of the cases

Addison's Disease Without Pigmentation—Ghrist and Rowntree report a case of Addison s disease resulting from tuberculosis of the suprarenals in which the clinical course was typical in every respect, except for the absence of pigmentation The course was rapidly and continuously downward The patient was not benefited by epinephrine and suprarenal cortex but appeared in fact, intolerant to them The diagnosis was made clinically and was confirmed by pathologic examination This case represents the first instance of Addison's disease without pigmentation confirmed pathologically in the Mayo Clinic, although more than seventy cases of Addison's disease have been observed

Journal of Cancer Research, Lancaster, Pa

11 *217 299 (Oct) 1927*

*Gye s Hypothesis on Etiology of Malignant Tumors J A Kolmer and M J Harkins Philadelphia—p 217
*Relation of Plasma Sodium Content of Mice to Their Susceptibility to Inoculable Tumor E E Jones and M D Rourke—p 232
Problem of Cellular Anarchy B Sokoloff—p 246
Biologic Measure of Roentgen Ray Dosage C Packard New York—p 282
Effect of Absorption on Relation Between Exposure and Biologic Effect of Radiation H M Terrill New York—p 293

Etiology of Malignant New Growths—The results obtained by Kolmer and Harkins in this study are interpreted as failing to confirm Gye s hypothesis on the etiology of malignant new growths

Relation of Plasma Sodium Content to Susceptibility to Tumor—The sodium content of the plasma of a 100 per cent susceptible and of two 100 per cent nonsusceptible strains of mice was determined by Jones and Rourke in order to discover whether there existed normally any difference in this respect between the strains which might play a part in determining susceptibility or nonsusceptibility to a particular inoculable tumor The results were negative The genetic factors for susceptibility are not expressed in the sodium content of the plasma

Journal of Experimental Medicine, Baltimore

47 185 343 (Feb 1) 1928

Influence of Suprarenal Glands on Resistance III Susceptibility to Histamine as Test of Suprarenal Deficiency W J M Scott Rochester N Y—p 185
*Common Cold II Study of Certain Gram Negative Filter Passing Anaerobes of Upper Respiratory Tract K C Mills G S Shibley and A R Dochez New York—p 193
Paratyphoid Infection in Guinea Pigs IV Course of Second Type of Salmonella Infection Naturally Appearing in Endemic Stage J B Nelson Princeton N J—p 207
*Etiology of Oroya Fever X H Noguchi New York—p 219
Id XI Comparison of Bartonella Bacilliformis and Bartonella Muris Cultivation of Bacterium Murium N Sp H Noguchi New York—p 235
Effect of Subsequent Agglutination of Exposure of Bacteria to Heated Antiserum F S Jones New York—p 245
Comparison of Spirochete of Yellow Fever (Leptospira Icteroides Noguchi) with Leptospira of Weil s Disease F Martini Bogota Colombia South America—p 255
Role of Reticulo Endothelial System in Immunity V Phenomena of Passive Immunity in Blocked and Splenectomized Mice C W Jungeblut New York—p 261
*Extent of Capillary Bed of Heart J T Wearn Boston—p 273
Role of Thebesian Vessels in Circulation of Heart J T Wearn Boston—p 293
Study of Mechanism of Recovery from Experimental Pneumococcus Infection O H Robertson S T Woo S Nan Cheer and L P King Peking China—p 317

Influence of Suprarenal Glands on Resistance—The fact that the resistance of rats to histamine is greatly diminished after suprarenalectomy leads Scott to propose this susceptibility as a functional test for deficient suprarenal cortex function

Etiology of Common Cold—A study of the gram-negative filter passing anaerobic organisms, described by Olitsky and Gates, and Gates and McCartney, was undertaken by Mills et al with a view to determining their general character and their possible role in the causation of the common cold They conclude that these organisms seem to constitute part of the normal flora of the upper respiratory tract and would seem to bear no etiologic relationship to the common cold

Etiology of Oroya Fever—Nine strains of *Bartonella bacilliformis* have been isolated by Noguchi from nine of twelve specimens of blood withdrawn from patients with verruga Morphologically the strains differed very little in fresh preparations examined by dark ground illumination In stained preparations some strains appeared coarser others finer than the average More striking variations are found in the virulence of the different strains for the monkey *(Macacus rhesus)* Most of the severe cases yielded virulent strains, while some of the strains from benign verruga were nonpathogenic It appears highly probable that the severe form of Carrion's disease is in general, caused by a virulent strain, while the benign forms are due to a strain of low virulence On the other hand, a virulent strain may cause benign verruga in unusually resistant persons and a weak strain may give rise to severe blood infection in unduly susceptible individuals An interesting phenomenon brought out by the present investigation was the failure of the nine human blood specimens to induce local verruga in the same monkeys in which the corresponding cultures, inoculated simultaneously at separate sites, gave rise to typical lesions Yet the original blood samples were shown by cultivation to have contained live bartonellas at the time they were inoculated and blood culture revealed the presence of the micro-organisms in the blood of monkeys which showed no other signs of infection after inoculation with the human blood The strains isolated showed similar serologic properties as tested by complement fixation

Experimental Acute Orchitis—Noguchi describes an organism which induced in the testes of normal rats an acute orchitis such as resulted from inoculation of the blood or liver suspensions of splenectomized rats In morphologic features the cultural forms of the micro-organism isolated resemble *B muris* The organism found in the testicular tissues however, is considerably coarser than *B muris* and takes a deeper stain Immunologic study failed to settle the question of the relation between *B muris* and the cultivated organism which is provisionally called *Bacterium murium*

Extent of Capillary Bed of Heart—Wearn has been able to determine the number of capillaries in the normal heart muscle This study has shown a very rich blood supply with an average of approximately one capillary for each muscle fiber in the ventricular walls and papillary muscles, and a less abundant supply in the auricular muscle and Purkinje system Capillaries were not found constantly in the valves of hearts in which there was apparently a complete injection of the capillary bed

Rôle of Thebesian Vessels in Circulation of Heart—Evidence is presented by Wearn to show a direct connection other than through the capillaries between the coronary arteries and the chambers of the heart This connection was shown by perfusion injections and serial sections to be through the thebesian veins Communications between the larger coronary veins and the thebesian veins were also demonstrated by the same methods In the event of gradual closure of the orifices of the coronary arteries the thebesian vessels can supply the heart muscle with sufficient blood to enable it to maintain an efficient circulation

Journal of Laboratory & Clin. Medicine, St Louis

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*Blood Picture in Purpura N Rosenthal New York—p 303
Anemia as Factor in Sedimentation Time of Erythrocytes R S Hubbard and H B Geiger Clifton Springs N Y—p 322
Sedimentation of Erythocytes H F Hunt Rochester Minn—p 327
Microscopic Slide Precipitation Test for Syphilis F B Johnson Charleston S C—p 334
Comparison of Kolmer and Kahn Tests for Syphilis C E Roderick F S Salisbury and C G Cates Camp Custer Mich—p 338
*Fatalities Following Use of Arsphenamine E Scott and R A Moore Columbus Ohio—p 345
Cytologic Key to Diagnosis and Prognosis of Neoplasms W C MacCarty Rochester, Minn—p 354
*Differential Blood Counts Comparison of Accuracy Obtained by Various Methods D N Beacom Denver—p 366
Pathologic Laboratory Examinations for Dentist C G Darlington New York—p 376
Turbidimetric Methods for Sugar in Blood and Urine A R Rose Newark, N J—p 382

Blood Picture in Purpura—Rosenthal studied the blood picture in various types of blood diseases accompanied by purpura He divides these purpuras into three main groups (1) purpura characterized by a diminution of the blood platelets with or without alteration of their functions, (2) purpura due to some change in the function of the platelets without a diminution of their number, (3) purpura due to changes in capillaries The blood picture in the first is diagnostic in cases of acute and chronic thrombocytopenic purpura, acute and chronic aplastic anemias and symptomatic thrombocytopenic purpura The second group chronic hereditary thrombasthenic purpura, is rare The third main group is purpura due to conditions which affect the capillaries A classification is presented as a result of a systematic study of 172 cases showing purpura as a primary or secondary symptom

Relation of Anemia to Sedimentation Rate of Erythrocytes—Hubbard and Geiger believe that there is a distinct relationship between the rate of sedimentation of erythrocytes on the one hand and their concentration in the blood on the other Rather small variations from normal blood counts may apparently produce quite marked differences in the sedimentation rate as usually measured When the sedimentation time is used clinically, this fact should be kept in mind for other factors cause marked deviations from the normal, and it is in these other factors that the clinician is primarily interested in his application of the test

Estimation of Sedimentation Rate of Erythrocytes—Hunt has devised a method, based on the work of Gilbert, of reporting the sedimentation reaction which would be a combination of time and distance This is termed the sedimentation index The sedimentation index is obtained by projecting the line drawn between the plotted point of the first and second hours on a scale drawn as a perpendicular line two squares to the right of the second-hour point or so that the horizontal distance from the first-hour point to the second-hour point is equal to the distance from the second hour point to the scale The scale is enumerated with 0 on the horizontal line marked cc, and the integral numbers follow in order downward, each large square representing one unit The reading is recorded in units and decimals thereof Thus a rapid sedimentation rate gives a high sedimentation index The method differs from Gilbert's chiefly in that he determines the sedimentation index by drawing a straight line from the 0 point paralleling the greatest drop in the curve during the first hour to a scale on the first-hour line

Slide Precipitation Test for Syphilis—In a series of 1,500 tests, Johnson made a comparative study of his results of the microscopic slide precipitation test, by the method of Kline and Young with the three tube Kahn test and with the Wassermann test A uniform agreement of all three was found in 89 per cent Agreement of microscopic tests and Kahn tests occurred in 96 3 agreement of microscopic tests and Wassermann in 91 3, and agreement of Kahn and Wassermann tests in 96 1

Comparison of Kolmer and Kahn Tests—Roderick, Salisbury and Cates regard the Kolmer test as being more reliable and sensitive for the diagnosis of syphilis and as a prognostic indicator in treated cases than the Kahn test, although the latter has merit For the present the two tests should be used simultaneously

Fatalities Following Injection of Arsphenamine—Scott and Moore report two cases A girl aged 16 had been given three injections of neoarsphenamine with no immediate untoward effects Six other patients were given injections of the same lot of drug without experiencing ill effects Two days after the injection, the patient complained of a slight headache and malaise This malaise and headache became very severe in the evening, and early on the morning of the next day she became comatose There was no nausea or vomiting at any time Three days after the injections another one of the patients became ill with the same symptoms The latter patient became comatose the same afternoon Both patients presented the same clinical symptoms, namely headache, malaise and coma, both received neoarsphenamine intravenously and were taking iodides by mouth, but no mercury had been used in either case In the terminal twenty four hours of life in both cases there was a complete anuria In one case a necropsy was performed The authors report on it in detail

Slide and Cover Method for Preparation of Blood Films—The method proposed by Beacom for the preparation of blood films is termed the slide and cover method A small drop of blood is placed near the end of a clean slide, and a medium to thin cover-slip is dropped on the blood, which will then flow out in a thin layer if the glass is clean and if there is not too much curvature to the slide As soon as the blood has stopped flowing, the slide is held on the table with the left hand and the first two fingers of the right are placed near the edges close to the left end of the cover glass Then with an even, fairly rapid pull it is slid along the slide in the direction of its long axis The amount of pressure necessary is only enough to keep the fingers from slipping from the spreader This leaves a smooth, even film covering a large or small area of the slide, depending on the size of the drop used

Laryngoscope, St Louis

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Endoscopic Experiences E L Lyers St Louis —p 1
Hairpin in Esophagus of Infant M C Myerson New York —p 19
Advanced Bilateral Mastoiditis with Slight Middle Ear Evidence A L Us ett Chester Pa —p 20
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Leeches as Foreign Bodies in Upper Air Passages in Palestine M Salzberger Jerusalem Palestine —p 27
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Primary Jugular Bulb Thrombosis Case J C Seal New York —p 37
Demonstration of Specimens of Sphenopalatine Gasserian Ganglion J I Klepper New York —p 41
Acute Occult Mastoiditis at Ten Weeks H B Silver Newark N J —p 45
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Medical Journal and Record, New York

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Air in Bladder in Conjunction with Roentgen Ray as Means of Diagnosing Bladder Conditions H Cohen New York —p 124
Loyalty W Lintz New York —p 133
Specific Treatment of Pneumococcic Ulcer of Cornea M R Dinkelspiel Wilkes Barre Pa —p 134
Mercurochrome in Treatment of Laryngeal Tuberculosis H F Gammons State Sanatorium Ark —p 136
Roentgen Ray Therapy in Hyperthyroidism 328 Cases of Thyrotoxicosis Subjected to Roentgen Ray Treatment W H Meyer New York —p 137
Goiter Nonsurgical Types and Their Treatment I Bram Philadelphia —p 142
Therapeutic Value of Implants of Sheep Testicle in Human Beings Fifty Cases G R Satterlee New York —p 145
New Animal Skin Hormone Preparation C Thomalla Berlin —p 150
Freshly Prepared Pancreatic Extract in Treatment of Malignant Disease A H May Buffalo —p 152
Arab Science I J Wright Pleasantville —p 153
Different Kinds of Doctors R T Morris New York —p 161

Mercurochrome in Treatment of Laryngeal Tuberculosis—On the basis of his experience, Gammons concludes that mercurochrome-220 soluble in a 20 per cent solution is a valuable agent in the treatment of pharyngeal and laryngeal infections complicating pulmonary tuberculosis Three times a week he applies the dye on the swab, being sure of getting enough of the solution into the larynx The color persists for a few days The mucous membrane tension is apparently much greater for the dye than for the silver salts preparation There has never been any bad reaction from these treatments

Military Surgeon, Washington, D C

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Ghent Congress of Royal Institute of Public Health—1927 G Fitz Patrick —p 145
Field Service J W Grissinger —p 157
Base Hospital Medical Problem in America France and Army of Occupation W C Stoner —p 178
Actinomycosis of Liver Following Suppurative Appendicitis A W Greenwell —p 185
Two Weeks' Course for Commanding Officers and Executives Medical Field Service School Carlisle Barracks Pennsylvania L S Medalia —p 198
Women Nurses with Union Forces During Civil War J C. Stimson and E C Thompson —p 208

FOREIGN

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British Journal of Surgery, Bristol

15 353 532 (Jan) 1928

Epoch Making Books in British Surgery D Arcy Power —p 353
Cholecystography Toxic Effects of Dyes B M Dick and V G H Wallace —p 360
Rupture of Urethra H Bailey —p 370
Congenital Absence of Humerus S A Smith —p 385
Torsion of Great Omentum Two Cases C MacAuley —p 387
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*Treatment of Ankle and Leg Fractures by Delbet Ambulatory Plaster Splint E L Robert —p 414
*Case of Actinomycotic Ulceration of Duodenum and Jejunum W I de C Wheeler —p 430
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Bacteriology of Cholecystitis A L Wilkie —p 450
*Results of Splenectomy for Purpura Hemorrhagica A W Spence —p 466
*Surgical Diathermy in Breast Cancer Application of Arc Electrode or Cutting Current to Radical Operation J Anderson —p 500
Case of Fracture of Skull Followed by Presence of Air in Cranial Cavity R D Mothersole —p 514
*Tendency to Recurrent Peptic Ulceration Following Gastro Enterostomy for Duodenal Ulcer W Thompson and M J Stewart —p 517
Case of Double Ureter with Calculi in Each Channel R St Leger Brockman —p 521
Abdominal Torsion of Omentum P S Foster —p 522
Torsion of Portion of Omentum G A Reid —p 523
Congenital Tumor of Neck D W Daniels —p 523
Case of Pedunculated Lipoma of Upper Arm B T Rose —p 525

Cholecystography Toxic Effects of Dyes—Clinical experiences and experimental observations have convinced Dick and Wallace that the use of sodium tetraiodophenolphthalein in diagnostic doses is not free from risk in certain circumstances In the absence of other contributory factors normal bile containing sodium tetraiodophenolphthalein introduced experimentally into the pancreatic ducts is sufficient to produce acute pancreatitis It may thus be inferred that in cases of cholelithiasis in which stones are present in the common bile duct and the conditions are otherwise favorable for the retrojection of bile into the pancreas the danger of acute pancreatitis occurring will be much greater if the regurgitated bile contains the phenolphthalein salt In obstructive jaundice the normal route of elimination of the drug is unavailable and small quantities are excreted in the pancreatic juice In animals with experimental biliary obstruction especially in rabbits, it was found that pathologic changes occurred in the pancreas, ranging from simple vascular congestion to hemorrhagic pancreatitis The conclusion to be drawn from this is that there is risk of injury to the pancreas by the administration of the agent to jaundiced patients who have chronic obstructive lesions of the biliary passages The pathologic changes which were experimentally produced in the liver lend strong support to the opinion that the toxicity of the drug on this organ is greater when biliary obstruction is present Although the agent is eliminated by the kidney in biliary obstruction, no ill effects apparently ensue in the normal kidney, nor, indeed, is this to be expected, as the rate of excretion is slow In two of the fatal cases reported by Dick and Wallace, larger doses than are now known to be safe were employed

Stabilization of Flail Leg—Gray pleads for the revision of the accepted views on the subject of arthrodesis of the knee in cases of extensive infantile paralysis of the lower limbs The cases selected for operation fall into two groups (1) those in which the lesion in the cord is so extensive that there is no return of muscle power whatever, and (2) those in which the degree of recovery is so small that the limb can never support the body weight without the help of irons so cumbersome as to constitute a serious impediment to walking The aim of the operation must be solid bony union at the knee joint and the achievement of this must be certain Such absolute certainty can be insured only by the use of a bone graft Gray has used this method for eight years and has not had failure of bony union

Delbet's Plaster Cast for Ankle Fractures—Robert is of the opinion that use of the Delbet plaster in all cases of ankle injury shortens considerably the period of treatment, as compared with other methods and that it dispenses with the tedious and expensive course of physical therapy required by them In leg fractures full weight-transmission through the seat of fracture made possible by using the Delbet plaster, stimulates rapid formation of strong callus and so shortens the period of treatment

Actinomycosis of Duodenum and Jejunum — Wheeler s patient had been ill for four months suffering from vague abdominal pains, with loss of weight loss of appetite, and gastric stasis His temperature ranged from 99 to 101, and cachexia was well marked Routine bedside examination revealed nothing except tenderness and some rigidity over a wide area above the umbilicus Hydrochloric acid was absent from the stomach contents, and raisins given at night were found in plenty on washing out the stomach the following *morning Blood cultures* were reported as negative The clinical diagnosis was cancer of the stomach The abdomen was opened in the middle line above the umbilicus The stomach and the first portion of the duodenum were examined and were found free from ulceration or other abnormality A loop of the jejunum about one foot from the duodenojejunal flexure was found to be the site of a tumor about the size and shape of a bantam s egg The loop of jepunum was resected and the intestine united by end-to-end anastomosis No other lesions were discovered at operation On the eighth day after operation the patient had a sudden pain perforation had obviously taken place, and he died in a few hours At the postmortem examination the third portion of the duodenum was found to be ulcerated in much the same manner as the loop of jejunum which was resected The immediate cause of death was leakage at the line of anastomosis The ulceration was of an almost diphtheritic type with comparatively little suppuration the tissue reaction being mainly of the plasma cell type with lymphoid-cell infiltration Many micro organisms were found in the superficial sloughs, the preponderating one being of streptothrix type Organisms of the ray-fungus type were found in the floor of the jejunal ulcer, but only in the slough of the duodenal one As no streptothrix was found in the lymphatic glands it is difficult to state with certainty that it was the causal agent of the ulceration, but there is sufficient evidence to consider it as being a likely factor in the process

Bacteriology of Cholecystitis—The bacteriology of fifty consecutive cases of gallbladder disease submitted to operation has been carefully worked out by Wilkie In the vast majority of cases of chronic cholecystitis the bile was sterile on culture Cultures from the submucous and outer coats leaving the mucosa intact have given a growth of streptococci in 42 per cent of cases Bile has been shown to inhibit the growth of this streptococcus The cystic gland in cases of cholecystitis has been shown to yield a growth of streptococcus in 86 per cent of cases *Bacillus coli* was recovered from the bile in only 6 per cent of cases Experimental studies tend to prove that cholecystitis appears to be a bloodborne streptococcic intramural infection

Splenectomy for Purpura Hemorrhagica—It is suggested by Spence that purpura hemorrhagica is a disease of the whole of the reticulo endothelial system and that three types exist, depending on the extent of involvement of the system The effect of splenectomy in a given case depends on the type to which the case belongs

Surgical Diathermy in Breast Cancer—Of fifty six cases of carcinoma of the breast excised by the arc electrode (1923-1926), Anderson reports that forty-three patients are alive and apparently well Thirty of these had glandular metastases at the time of operation There has been no case of simple local recurrence, but two patients, in whom the disease was found at operation to be beyond the range of excision, ultimately died of diffuse general metastasis with local and general nodules There has been only one case of appreciable edema of the arm and in this case malignant glands were found adherent to the axillary vessels and nerves The edema has now receded and the patient appears well There was no case of secondary hemorrhage or of protein shock

Recurrent Peptic Ulceration Following Gastro-Enterostomy—A case is reported by Thompson and Stewart in which within sixteen years, four operations of gastrojejunostomy two posterior and two anterior, and one of partial gastrectomy, were performed The original duodenal ulceration and subsequent jejunal ulceration in relation to the two posterior gastrojejunal stomas cicatrized completely in turn while fresh jejunal ulceration in relation to the third stoma was present at the time of the partial gastrectomy The patient died of chronic interstitial nephritis two years and one month after the fifth and final operation, and at necropsy two sub acute ulcers were found in the remaining portion of the stomach

Lancet, London

1 167 216 (Jan 28) 1928

Damages to Bones and Reputations E W Hey Groves—p 167
Public Health Service and Private Practitioner F E Wynne—p *172*
Unrecognized Toxic Substances in Human Feces D C Watson and P De—p 174
Relative Frequency of Various Positions of Vermiform Appendix C P G Wakeley and R J Gladstone—p 178
*Relation of Deficiency of Vitamin B to Atony of Stomach M J Rowlands and E Browning—p 180
Treatment of Primary or Essential Marasmus by Ostelin K McFadyean—p 181
Squint Cured by Sight Exercise K R Smith—p 182
*Inversion of Uterus C L Lander—p 182

Damages to Bones and Reputations—The medicolegal importance of a roentgen ray examination of all fractures is stressed by Hey Groves In no less than 90 per cent of all cases in which litigation resulted from the treatment of fractures, the main point on which a charge of negligence was based consisted in the absence of roentgen ray examination In one third of the cases a correct diagnosis of the main fracture had been made but the existence of some complication or malunion had been missed

Toxic Substances in Human Feces—Experiments made by Watson and De prove the existence of a heretofore unrecognized toxic substance or substances in the feces in the different diseases investigated This substance—or substances—was absent or relatively absent in the feces of lower animals and of men when the bowel was normally clean An important etiologic relationship exists between the unhealthy state of the lower bowel and the disease revealed by the results of treatment directed toward restoring the bowel as far as possible to its natural state of cleanliness

Positions of Appendix—In 5,000 cases reviewed by Wakeley and Gladstone the appendix was postcecal and retrocolic in 3 219 pelvic, on psoas muscle near or hanging over the brim of the pelvis in 1,606 subcecal, beneath the caput ceci in 101 anterior or preileac in forty-seven, and splenic' or postileac in twenty five

Relation of Deficiency of Vitamin B and Gastric Atony—Rowlands and Browning conclude from their study that the commonest cause of an atonic condition of the stomach, leading to marked distention and downward displacement is the absence of vitamin B from the diet and in all probability the similar condition seen so often among patients is due to the deficiency of vitamin B in modern diet They found that the detoxicated embryo of cereals has a much more powerful vitamin B content than yeast

Inversion of Uterus During Puerperium—Lander relates the case of a woman whose baby was born after prolonged forceps labor A 'battledore" placenta was delivered an hour after the child The puerperium was uneventful and the patient made excellent progress, except that catheterization was required On the ninth day the patient was instructed by the midwife in charge to sit out of bed and attempt to micturate spontaneously While the patient was making expulsive efforts in a sitting posture, the uterus suddenly became inverted and presented at the vulva

Bulletin Medical, Paris

41 1445 1472 (Dec 28 31) 1927

- *Intravenous Bromotherapy in Pruritus A Sezary —p 1451
- Accidents of Vaccinotherapy in Dermatology C Flandin —p 1453
- Hydroa and Colic Disturbances P Blum and F Terris —p 1455
- Tattooing and Functions of Skin A C Guillaume —p 1457
- Case of Perineal Pruritus J Huet —p 1464

Sedative Medication, Especially Intravenous Bromotherapy in Pruritus—Sezary had prepared ampoules of 10 cc of a sterilized solution of sodium bromide containing 10 Gm of this compound per one hundred cubic centimeters of a sodium chloride solution (7 5 1,000) Patients with pruritus received daily intravenous injections of from 10 to 15 cc In all, twenty-nine cases were treated and cure was effected in most of those in which the dermatosis was not connected with severe organic lesion Intravenous bromotherapy acts not only through its sedative effect on the nervous system, but also sometimes by shock and sometimes by a modification of general biologic conditions

Gazette Hebdomadaire des Sciences Med de Bordeaux

19 49 64 (Jan 22) 1928

- Parathyroid Therapy in Acute Chorea Molin de Teyssieu and Fitoussi —p 51

Parathyroid Therapy in Acute Chorea—A girl, aged 12 years, who had acute chorea failed to improve when treated with rest in bed, a milk diet and a solution of arsenous acid When given parathyroid extract, she improved rapidly Cure was complete in less than a month

Gazette des Hôpitaux, Paris

101 49 64 (Jan 14) 1928

- Pathogenesis and Physiopathology of Toxic Uremia A Puech —p 53
- Danger of Spinal Anesthesia in Total Hysterectomy Y Bourde —p 56

Danger of Spinal Anesthesia in Total Hysterectomy—In spinal anesthesia there is danger of defecation during operation An enema should be given on the morning of operation After the vulvovaginocervical toilet the vagina should be packed with sterile gauze Bourde is led to make these suggestions because of an unfortunate case in which when he removed the vaginal forceps, feces irrupted through the vagina and covered the operative field In spite of the most careful treatment, the patient died

Paris Medical

64 33 48 (Jan 14) 1928 Partial Index

- *Reactivation of Syphilis by Antisyphilitic Treatment G Milian —p 42

Reactivation of Syphilis by Antisyphilitic Treatment—Reactivations of syphilis during treatment are due to two factors, either medication is given in insufficient or irregular or too widely separated doses or else the spirochete is resistant to the drug used Most frequently these reactivations are due to the use of neoarsphenamine

64 49 80 (Jan 21) 1928

- Dermatology in 1928 G Milian and L Brodier —p 49
- Dermatoses of Canine and Feline Origin Hudelo and Rabut —p 56
- Case of Hallopeau s Continuous Acrodermatitis J Nicolas and J Lacassagne —p 61
- Chilblain Tuberculids and Xanthoma in the Same Lesions Gougerot —p 64
- Dressings of Ointment on Muslin C Simon —p 68
- Cutaneous Reactions and the Menopause H Montlaur —p 69
- *Actinotherapy in Psoriasis L Marceron —p 73
- Ulcerous Purpuric Bullous Tuberculids G Milian —p 75

Dermatoses of Canine and Feline Origin—Mange in the dog is usually caused by *Sarcoptes scabiei canis* and in the cat by *Notoedres minor cati* The presence of the former in the human skin results in a pruritus accompanied by an eruption of papular vesicles It is an eruption relatively discrete disseminated, attacking especially the anterior surface of the forearm, the abdominal wall and the internal surface of the thighs The *Notoedres minor cati* causes an eruption beginning with a papule, sometimes like nettle rash, which soon is topped with a vesicle and after ten days is transformed into a typical papule of prurigo It may be distinguished by its monomorphous aspect and by its distribution which is dependent on the usual places of contact with the cat The eruption is accompanied by a pruritus more severe at night Cat mange will heal of itself if the cause of the disease is removed Mange of canine origin should be treated as is human mange by the classic friction or by Milian's treatment Inflammations caused by the trichophyton seem to be more often due to the dog Favus of animal origin is rare in man In microsporias the eruption is present only or is most marked on the uncovered parts It is composed of some rounded erythematosquamous elements but especially of highly inflammatory lesions The treatment of ringworm caught from animals is the same as that of all epidermomycoses

Dressings of Ointment on Muslin—A thin piece of muslin covered with ointment is an excellent dressing for localized skin diseases, especially on the limbs Simon used five different kinds of ointment muslins zinc paste muslin weak reducing ointment, strong reducing, very strong reducing ointment and yellow oxide of mercury ointment muslin, in cases of eczema, psoriasiform parakeratosis psoriasis impetigo The ease of its use its cleanliness and the results obtained seemed superior to those obtained with the same preparations used as simple ointments, pastes or plasters

Cutaneous Reactions and the Menopause—The skin diseases most common at the menopause are acne rosacea pruritus, eczematiform reactions and alopecia Opotherapy sedative treatment desensitization and various external treatments are recommended

Actinotherapy in Psoriasis—An intense erythema caused by light rays acts very favorably on psoriasis The rays of the sun may be used but the most practical source of short rays is the mercury vapor quartz lamp Because of the pain only a limited surface should be exposed at one time The patients should be advised of the pigmentation which will follow exposure Usually it suffices to produce a severe erythema twice in succession over one area to free it of all lesions of psoriasis If some small actino-resistant points of psoriasis remain, these may be got rid of with a chloroform solution of guttapercha-containing chrysarobin

Ulcerous Purpuric Bullous Tuberculids—Milian reports a case of ulcerous lesions of the skin some of them covered with crusts analogous to those of ecthyma, accompanied by purpuric spots on the lower limbs These apparently followed the appearance of a certain number of bullae so that taken all in all it seemed to be an ulcerated bullous purpura Histologic examination of these bullous lesions did not reveal typical tuberculous formation A cuti reaction with raw tuberculin provoked the formation of a bulla which was followed by an ulceration the structure of which was analogous to that of the ulcerations on the lower limbs of the patient

Presse Medicale, Paris

36 17 32 (Jan 7) 1928

- *Sodium Chloride in Intestinal Intoxication A Gosset L Binet and D Petit Dutaillis —p 17
- Etiology and Pathogenesis of Otitic Osteoporosis A Malherbe —p 21

Value of Sodium Chloride in Hypertonic Solution and in Large Doses in Intoxication from Occlusions of Digestive Tract—Gosset et al report two cases of intestinal occlusion in which the administration of sodium chloride as a measure supplementary to operation had very good effects They inject, in the first twenty-four hours, 1 liter of physiologic serum under the skin and 100 cc of sodium chloride solution (20 per cent) intravenously, in five injections of 20 cc at regular intervals The treatment should be continued for the first forty-eight hours with no interruption at night The chlorides of the serum should be determined daily as a control of the therapy

36 33 48 (Jan 11) 1928

- *Vaccination of the New Born Against Tuberculosis A Calmette —p 33
- Pressure of Spinal Fluid in Epilepsy R Schrapf —p 34
- Pharmacologic Action of Amino Bases of Ergot Raymond Hamet —p 35

Preventive Vaccination of the New-Born Against Tuberculosis by B C G—Between July 1, 1924 and Dec 1 1927 52,772 children have been vaccinated at birth in Paris and in the departments Of these, 5 749 born of tuberculous mothers or living in a tuberculous environment have been followed The general mortality of 3,808 infants up to 1 year of age 3 1 per cent, is less than one half of that among the nonvaccinated children, with or without tuberculous contact For 1,941 children between the ages of 1 and 3½ years the general mortality was 1 2 per cent, lower by 0 4 per cent than the mortality of the age group 1 to 4 years in nonvaccinated children, with or without tuberculous contact Four of the twenty-one deaths in this group were presumed to be from tuberculosis Revaccination at the end of the first year was done in 298 cases All of these children are living and have reached from 2 to 3½ years of age It seems that the antituberculous immunity produced by B C G, lasts much longer than had previously been anticipated

Progres Medical, Paris

54 33 80 (Jan 14) 1928

Restricted Nitrogen Diet C Richet and Dublineau —p 41
Pulmonary Tuberculosis and Puerperium M Metzger —p 45
Spinal Anesthesia E Bressot —p 49
Tuberculous Ulcer of Lower Lip Lortat Jacob —p 54

Restricted Nitrogen Diet —A normal man usually consumes 1 40 Gm of protein per kilogram of body weight per day, a normal child of 12 years, 2 50 Gm The strict nitrogen-poor diet comprises fruits sugars, jellies, soup with tapioca, denitrogenized and dechloridized bread ad libitum with 100 Gm of potatoes 100 Gm of carrots and 100 Gm of fresh cream This diet furnishes 0 15 Gm of protein per kilogram of body weight and should be used only for the sick The modified restricted nitrogen diet gives 0 20 to 0 45 Gm of protein per kilogram To the above articles of diet the authors added cauliflower cabbage Jerusalem artichokes string beans rice and small amounts of macaroni and the like The allowance of potatoes is increased the sugar decreased Two or three times a week 75 Gm of meat or fish is allowed This diet may be augmented by allowing 100 Gm of meat four times a week Occasionally a fruitarian day may be interposed The foods to be proscribed are milk eggs cheese peas and beans The caloric value of the diet must be kept in mind *Animal protein is not prohibited any more strictly* than vegetable protein In normal old people, a diet furnishing 0 4 or 0 5 Gm of nitrogen per kilogram of body weight may be prescribed, but this diet is contraindicated in normal children adolescents and adults It is indicated in hyperazotemia, even though slight It is good in arteriosclerosis in hypertension, in infantile prurigo A few cases are reported

Spinal Anesthesia —Spinal anesthesia should be reserved for adults, especially the aged It should not be used in the tuberculous in the syphilitic or in persons with nervous disturbances with shock or severe trauma It is especially suitable in operations below the umbilicus Bressot collected thirteen instances of failure of spinal anesthesia in his first three years of practice during which time he administered it 385 times In the next two years he had three failures in 157 anesthesias and none in the last two years among seventy six He has seen many instances of minor and one instance of more severe bulbar disturbances resulting from this form of anesthesia Vomiting occurred during operation in 2 5 per cent of his cases, within eighteen hours in 8 5 per cent It was prolonged during from three to five days in nine patients Headaches coming on eight or ten hours after operation and lasting twenty-four or thirty six hours occurred in 17 5 per cent of the cases, but yielded quickly to acetyl salicylic acid Headaches lasting from two to five days were noted in 6 5 per cent of the cases Septic meningitis was not seen Kernig's sign with photophobia was noted in one patient who had had spinal meningitis two years previously Pain in the back and retention of urine are fleeting and are not more frequent than with any other anesthetic There were seven cases of pulmonary congestion one of paralysis of the external oculomotor nerve None of the author's personal cases had medullary disturbances He saw them in two cases which had been referred to him In two cases defecation occurred on the operating table

Schweizerische medizinische Wochenschrift, Basel

58 25 48 (Jan 14) 1928

Nutrition and Reproductive Organs H Guggisberg —p 25
Iodine Goiter in Switzerland W Fluck —p 28
*Postclimacteric Uterine Hemorrhages with Ovarian Tumor M Wetterwald —p 37
*Sterility After Cesarean Section J Mennet —p 41
Appendicitis Caused by Worms A Muller —p 42

Postclimacteric Uterine Hemorrhages with Ovarian Tumor —Wetterwald reports three cases of postclimacteric uterine bleeding for which there was no cause other than ovarian tumor

Sterility After Cesarean Section —The sterility figures for cesarean section deliveries are so high that they should influence the choice of the physician attending the confinement, especially in primiparae The percentage of post cesarean sterility is smaller in the country districts than in the city Statistics are given

Pediatria, Naples

36 1 56 (Jan 1) 1928

Sepsis in the New Born R Vaglio —p 1
*Test for Kala Azar S Fabris —p 5
Three Cases of Chloroma G Castorina —p 15
*Pernicious Malaria in Children G A Pinna —p 24

Test for Infantile Kala-Azar —Of the 300 blood serums from children which were tested twenty-five were from children with leishmaniasis in various stages and the rest were from normal children and children with diseases such as tuberculosis malaria splenic anemia and congenital syphilis The serum from children with leishmaniasis when brought into contact with solutions of urea antimony compounds invariably yielded a white ring reaction The test was always negative with inorganic antimony compounds or urea solutions The best solution is one of from 0 5 to 1 per cent Inactivated serums gave inconsistent results Those from patients with other diseases proved negative

Hyperglycorrhachia as a Diagnostic Sign in Pernicious Malaria in Children —In twenty children with malaria complicated with meningeal manifestations, the sugar content of the cerebrospinal fluid usually increased, especially in pernicious cases The level varied from 0 70 to 3 Gm per thousand cubic centimeters

Policlinico, Naples

35 1 44 (Jan 9) 1928 Practical Section

*Pancreatic Duct Obstruction G Martino —p 3
Retrograde Strangulation of Testis G Brendolan —p 5

Diagnosis of Obstruction of the Pancreatic Duct.—After a preliminary twenty-four hour fast, the patient is given peptone meat extract or broth to stimulate gastric secretion Blood specimens are obtained before the test and half an hour, an hour and three hours afterward In case of complete obstruction of the pancreatic duct, instead of the usual increase of the blood sugar curve, a decrease or at least no change will be noted

Riforma Medica, Naples

44 1 24 (Jan 2) 1928

*Treatment of Leukemia and Polyarthritis P Moretti —p 2
Boveri s Spinal Fluid Test A M Fiamberti —p 7

Relapsing Fever Treatment of Leukemia and Chronic Polyarthritis —The results in one case of leukemia and in another of subacute rheumatic polyarthritis justify resorting to relapsing fever treatment of such cases, in Moretti s opinion

Rivista di Clinica Medica, Florence

28 *705 744 (Sept 30) 1927*

*Relapsing Fever Treatment of Neurosyphilis E Signorelli —p 705

Relapsing Fever Treatment of Neurosyphilis —The three cases treated with relapsing fever were of general paralysis syphilitic meningitis and tabes The result was excellent in all Relapsing fever therapy makes previously resistant cases more amenable to treatment with arsenicals On the other hand treatment with bismuth and arsphenamine seems to enhance the therapeutic effect of relapsing fever

Archivos de Medicina, Cirugia y Espec, Madrid

27 745 796 (Dec 31) 1927

Gluteal Clonus J Sanchis Banus—p 745
*Covered Perforations L Urrutia—p 752
Vaccine Treatment of Chancroid J S Covisa and J Gay Prieto—p 756
Uterine Epithelium and Cancer J Torre Blanco—p 763
Cancer of Esophagus J M Madinaveitia J Alonso and J G Garcia Moran—p 768
Elimination of Urea R Fraile—p 771
Histamine and Gastric Secretion H G Mogena and A Lopez Fernandez—p 774
Sella Turcica in Children M V F Arce—p 779
Autohemotherapy in Skin and Venereal Diseases C Garcia Casal p 787

Gluteal Clonus, a New Reflex—There is a gluteal clonus Sanchis Banus states exhibiting the same type of phenomenon as the ankle and knee jerks This reflex was elicited in two patients with a pyramidal syndrome It is not, however, a pathologic sign This reflex represents the usual response of the muscle to the stimulus caused by stretching of the tendons

Covered Perforations of Peptic Ulcer—By covered perforations Urrutia means those not followed by a general acute peritonitis If left alone, about 10 per cent of the patients survive Out of thirteen patients operated on, one died In some cases, the patient survives one perforation to die afterward of another perforation Secondary abscesses also develop around the ulcer or in neighboring structures The perforation may not cause severe pain If surgical treatment is given immediately, the death rate is from 10 to 15 per cent

Esophageal Cancer on a Caustic Scar—At the Madinaveitia Institute, esophageal cancer represents fully 25 per cent of all cancers of the alimentary tract The tumor reported was exceptional in that it did not cast any mediastinal shadow in the roentgenogram The diagnostician was also misled by a history of burn by a caustic with the usual course The only suspicious sign was bleeding at touch

Ars Medica, Barcelona

3 365-404 (Nov) 1927

Laryngeal Tuberculosis. L Vila Abadal—p 365
Uremia A Remond—p 371
Treatment of Hemophilia J Pi Suner Bayo—p 378

Treatment of Hemophilia—In a case of hemophilia in a boy, aged 12, treatment with vitamin preparations and triple calcium phosphate has seemed to be successful In little over a year the blood coagulation time had decreased from two hours and ten minutes to fourteen minutes The serum calcium increased from 5 7 mg to 11 4 mg per hundred cubic centimeters The existing oxaluria subsided

Boletín de la Soc de Obst y Ginec, Buenos Aires

6 508 574 (Nov 30) 1927 Partial Index

Deep Roentgen Ray Therapy in Uterine Cancer F Carranza and A H Roffo—p 508
Radium in Cervical Cancer N Capizzano—p 517

Deep Roentgen-Ray Therapy in Uterine Cancer—Carranza and Roffo report on more than 500 patients with cancer of the uterus treated with roentgen rays since 1923 The types of tumor were squamous cell carcinoma 60 per cent, metatypical squamous cell carcinoma, 30 per cent, basal cell carcinoma and adenocarcinoma, 5 per cent each No relation could be traced between the histologic type and the postirradiation course No patient was cured, but few were in the first (operable) stage when applying for treatment In many patients, including those in the third stage with an inoperable tumor, a temporary improvement is mistaken for recovery

Brasil-Medico, Rio de Janeiro

41 1311 1336 (Dec. 10) 1927

*Oral and Nasal Immunization V Brazil and J Vellard—p 1311
Fernandez Figueira s Cephaloplegia F Moncorvo Jr—p 1318
Ultraviolet Rays in Ophthalmic Herpes Zoster T Falcão—p 1319
Intra Uterine Fracture of Clavicle. E. Filgueiras—p 1320

Experiments in Immunity by the Oral and Nasal Routes—Experiments in guinea-pigs and rabbits demonstrate that diphtheria toxin is absorbed to a greater or lesser extent by the mucous membrane of both mouth and nose The nasal route is far more effective and easier It is therefore the route of choice for either anatoxin or lipovaccines Nasopharyngeal absorption occurs not only with diphtheria toxin, but with other toxins (tetanus, dysentery) and snake venom The method, because of its simplicity and harmlessness, has much to commend it

Archiv fur Psychiatrie und Nervenkrankheiten, Berlin

82 123 284 (Nov 15) 1927

Histopathology of Microglia L von Meduna—p 123
Position of Psychiatrist with Regard to Penal Code E Schultze—p 194
*Physicochemical Changes in the Blood in Experimental Epilepsy Waschetko and Seletzky—p 232

Physicochemical Changes in the Blood in Experimental Epilepsy—Tests made on rabbits before and after the cerebral cortex was irritated by the faradic current showed that if the experiment is repeated several times on the same animal at intervals of less than three days the effect in the form of convulsions is caused by lower electric tension, that is lability of the cerebral cortex is established If the animal is allowed a rest period of seven or more days, it then reacts to the faradic current in the same way as an animal undergoing the experiment for the first time The catalase index after irritation not only does not decrease but rather increases, on the other hand the index of the catalase begins to fall in proportion as the brain becomes labile with regard to the irritating agent, that is in so far as a lesser irritation is necessary for the production of the effect of the convulsion Electric conductivity of the serum is reduced after the experiment These results seem to confirm the opinion of many authors that epilepsy is not a disease of the brain but the result of a disturbance of metabolism analogous to the other conditions of metabolic dyscrasia with epileptiform convulsions, uremia and eclampsia

Beitrage zur Klinik der Tuberkulose, Berlin

67 363-466 (Nov 19) 1927

Part Played by Forms of Second Allergy Period in Pulmonary Tuberculosis of Adults K Krause—p 363
Pneumoconiosis and Tuberculosis K. Krause and F Loben—p 369
*Fate of Patients with Open Tuberculosis K Krause—p 386
Cardiac Disturbances After Pleuritis Prognosis of Mediastinal Displacements F Loben—p 389
Treatment of Syphilis in Tuberculosis Sanatoriums F Loben—p 400
Place of Hospitals in Combating Tuberculosis C Coerper—p 404
Psychology of Tuberculous Patients Creischer—p 408
Tuberculosis in Early School Age O Kieffer—p 417
Culture of Tubercle Bacillus for Diagnosis C Sonnenschein—p 451
Tuberculin Test in Schools Vonessen—p 464

Fate of Patients with Open Tuberculosis—Of 969 patients treated for open tuberculosis in sanatoriums between 1902 and 1922, 40 per cent were living in the spring of 1927, 83 per cent of these were able to work. The figures show further that a patient who is alive five years after sanatorium treatment of open tuberculosis may expect to live and be capable of work for a long time

Tuberculosis in Early School Age—Kieffer reports the results of systematic serial clinical and roentgenologic examinations of 1,700 children during the first three years of school life Of 879 boys of the first year (from 5½ to 6½ years old) 30 7 per cent gave a positive tuberculin reaction of 798 girls, 25 9 per cent gave a positive reaction In the third school year the figures were 41 3 per cent for the boys and 48 7 per cent for the girls The clinical diagnosis of tuberculosis could be made from the lung changes alone in a very few cases A fresh primary focus was found eight times in the first-year children, once in the third-year children In some cases it was possible to follow the changes that the tuberculous foci underwent from the first to the third school year The incidence of various varieties of tuberculosis is given and a number of significant case histories are discussed

Deutsche medizinische Wochenschrift, Berlin

54 43 84 (Jan 13) 1928 Partial Index

Value of Morphologic and Functional Considerations for Diagnosis and Therapy Goldscheider—p 43
*Management of Labor in Heart Disease E Sachs—p 45
Protective Inoculation Against Diphtheria J Schwalbe—p 47
Treatment and Control of Addiction to Alkaloids P Wolff—p 51
Arsphenamine Treatment of Syphilis D Feuerstein—p 54
*Roentgenologic Diagnosis of Intestinal Tuberculosis G Hammer—p 57

Management of Labor in Heart Disease—The dangers of labor for the patient with heart disease are three-fold, psychic excitement which causes blood pressure fluctuations, the extra burden on the heart in the second stage and the creation of a vacuum in the heart after labor if, after the emptying of the uterus the intra-abdominal blood pressure falls and acute fluctuations occur The injured heart usually recovers speedily if there is no infection A decompensated case of mitral stenosis and a compensated case of aortic insufficiency are reported

Value of Protective Inoculation Against Diphtheria—Schwalbe collected the opinions of some twenty German pediatricians on the subject of preventive inoculation against diphtheria Many of them do not consider it necessary, because diphtheria is not very common, under special circumstances in isolated cases it is recommended In general, the idea of obligatory inoculation is not supported

Roentgenologic Diagnosis of Intestinal Tuberculosis with Examinations of Function of Ileocecal Valve—Most important for the diagnosis of intestinal tuberculosis are the symptoms which are caused by anatomic changes in the intestinal wall Pointed or wavy irregularities in the contour are evidence of ulcerous tissue defects Rigidity of the wall, accompanied by obliteration of the haustra, narrowing of the lumen and reduced extensibility, is a manifestation of infiltrative processes in the intestinal wall The ulcer ring shadow can be taken as indicating an ulcer filled with barium residue The Stierlin symptom in so far as it expresses a narrowing of the lumen through infiltrating and tumor-like changes of the intestinal wall and intestinal stenosis, which may however be due to other causes are further evidence The symptoms arising from functional influences are irregularities in filling and the Stierlin symptom, in so far as it comes about through increased contraction on account of greater irritability of the diseased intestine The Stierlin symptom is present in about 50 per cent of the cases of ulcerous tuberculosis but also appears in the healthy intestine It is not easy to differentiate tuberculosis from ulcerous colitis because in the latter ulcerous tissue defects are also present, although the changes seem to be less Intestinal carcinoma is scarcely to be differentiated from ileocecal tuberculosis Insufficiency of the ileocecal valve must be regarded as normal

54 85 126 (Jan 20) 1928 Partial Index

Frontal Psychoses M Rosenfeld—p 85
Importance of Venous Rete Mirabile for Closure of Certain Openings of Body H Stieve—p 87
Regional Jaundice Blistering Method of Examining Tissues F Umber and M Rosenberg—p 90
*Monocytes in Experimental Tumor Production I Haagen—p 92
*New Method of Evaluating Toxin and Antitoxin in Isolated Vessel Preparations E Friedberger—p 94
*Treatment of Nervous Aerophagy J H Schultz—p 95

Monocytes in Experimental Tumor Production—Haagen claims that the monocytes are probably the bearers of the tumor agent Only monocytes obtained from the blood of sarcomatous chickens could be used in the successful transplantation of chicken sarcoma Tumor transference was also carried out with the isolated monocytic ameboid cells from the sarcoma cultures, but not with the fibroblasts so obtained Normal monocytes acquire the faculty of bringing about sarcoma formation in the chicken if they are treated beforehand with otherwise inactive sarcoma filtrates With fibroblasts, tumors are not formed If fresh or cultivated normal monocyte cultures are injected into chickens together with very weak solutions of arsenous acids, a highly malignant sarcoma, such as never develops with fibroblasts is obtained The malignant element must be a chemical substance present only intracellularly in the active form probably an enzyme, ferment or vitamin It originates in exogenous irritation which is also of chemical nature, but must play the role merely of activator or catalyzer

New Method of Evaluating Toxin and Antitoxin in Isolated Vessel Preparations—The fluid to be examined is passed through the properly kept abdominal aorta of a guinea-pig and the number of drops escaping in a certain length of time is calculated Most toxins cause a great decrease in the number of drops, while antitoxic serums are without influence Through mixing the vessel-narrowing toxin solutions with the corresponding antitoxic serum the amount of antitoxin is determined which causes the complete disappearance of the action of the toxin

Treatment of Nervous Aerophagy—There are persons in whom there is lack of coordination between swallowing and breathing They take a deep inspiration before and with each swallow so that when they swallow, a centripetal air current is established If this is pointed out to the patient, and he is instructed to practice eating and drinking and to swallow only in the expiratory stage or in the accompanying or following breath pause, in many cases the tympany after meals will disappear, as Schultz has proved

Klinische Wochenschrift, Berlin

7 97 144 (Jan 15) 1928 Partial Index

Circulatory Conditions and Distribution of Blood Cells R Fåhraeus—p 100
Gas Treatment of Malignant Tumors and Cachectic Conditions B Fischer Wasels—p 106 C td
Functional Tests of Vegetative Nervous System A Kamsler—p 110
Group Determination in Transfusions K Landsteiner—p 112
Treatment of Exudative Diathesis with Hydrochloric Acid Milk K Scheer—p 113
Experiences with Irradiated Ergosterol H Strote—p 114
*Cholesterol Metabolism and Growth of Hair K Linser and H Kahler—p 116
Group Specific Organic Differences in Human Beings E Witebsky—p 118
Oral Immunization K Fuerst and M Klotz—p 118

Treatment of Exudative Diathesis with Hydrochloric Acid Milk—Scheer reports six cases of exudative diathesis in infants in which hydrochloric acid milk brought about complete cure in from two to four weeks The healing process is independent of body weight The milk is prepared as follows To 250 cc of cool, boiled milk is added, drop by drop and while stirring 10 cc of normal hydrochloric acid and from 6 to 10 per cent, i e from 15 to 25 Gm of cane sugar to taste

Cholesterol Metabolism and Growth of Hair—Growth of hair may be promoted by rubbing cholesterol petrolatum or plain petrolatum vigorously into the skin, while the mere application of either ointment has no effect The efficacious factor is the irritation of the skin produced by the rubbing There is no specific action of the cholesterol These deductions were made from the results of animal experiments

Wiener klinische Wochenschrift, Vienna

41 1 40 (Jan 5) 1928 Partial Index

Dead Point Second Wind and Angina Pectoris K F Wenckebach—p 1
*Pathologic Anatomy of Angina Pectoris H Kutschera Aichbergen—p 6
Diagnosis and Prognosis of Syphilitic Aortic Diseases H Schlesinger—p 9
Cystic Cavities Appearing Normally During Development of Cerebellum in Man F Hochstetter—p 13
Inoculation of the New Born with B C G A Calmette—p 14
Geochemistry and Biochemistry of Iodine G Lunde—p 15
*Protective Inoculation Against Measles J Zikowsky—p 19
Acute and Subacute Endocarditis P Saxl—p 21
Insulin Sensitiveness K Csepai and Z Ernst—p 25
*Herpes Zoster in Angina Pectoris R Wertheimer—p 26
Cure of Genuine Lipoid Nephrosis E Felber—p 27

Dead Point, "Second Wind" and Angina Pectoris—Wenckebach compares the course of the attack in ambulatory angina pectoris with the physiologic processes in prolonged physical exertion Under normal conditions the oppression amounting sometimes to slight pain, due to congestion of the arteries from increased heart action, passes quickly because of the prompt opening of the peripheral vessels But in angina pectoris there is severe pain, which by reflex action, keeps the peripheral vessels closed A vicious circle is thus set up Nitrite treatment opens the peripheral vessels and is therefore more than a symptomatic therapy The discovery of a means to keep the peripheral circulation open would be the greatest step forward in the treatment of angina pectoris Similarly, interruption of the afferent paths of pain conduction is more than a palliative remedy, since it can prevent the formation of the vicious circle

Pathologic Anatomy of Angina Pectoris—Overdistention of the wall of the coronary artery and atrophy of its muscular sheath were demonstrated by Kutschera-Aichbergen in microscopic examinations in three cases of angina pectoris with coronary sclerosis These observations harmonize with the *distention theory of angina pectoris rather than with the* spasm theory

Diagnosis and Prognosis of Syphilitic Diseases of the Aorta—The increase in mesaortitis in recent years is beyond question Schlesinger says some statistics place this among the most frequent of syphilitic localizations The ascending aorta is a favorite site It is often combined with atheroma, and aneurysm is a frequent sequela Insufficiency of the aortic valve when not from endocarditis is syphilitic in origin in the overwhelming majority of cases A myocardiac process of syphilitic nature often accompanies the aortic changes If the coronary arteries become involved, we have the phenomena of angina pectoris One third of the cases of syphilitic aortic disease have a negative Wassermann reaction The prognosis depends much on localization complications and the time of beginning treatment *In isolated disease* of the ascending aorta it may be relatively benign Aortitis accompanying neurosyphilis is seldom dangerous On the other hand, more than half of the patients with mesaortitis die of this lesion

Protective Inoculation Against Measles—Zikowsky reports that among eighty-five children exposed to measles and inoculated at the right time and in correct doses with convalescent serum three (3 5 per cent) developed the disease in a light form Without inoculation his experience would lead him to expect 90 per cent of children over 8 months old, similarly exposed (large wards), to come down with the disease

Herpes Zoster with Angina Pectoris—The location of the herpes zoster in this case was over the region of the heart, over the left scapula and on the ulnar side of the left arm The patient described it as being almost identical with the skin areas to which the radiating pains of the angina pectoris (on the basis of a syphilitic mesaortitis) were projected Obviously involvement of the eighth cervical segment was responsible for the herpes zoster of the forearm and involvement of the second, third and fourth thoracic segments was responsible for the herpes zoster on the anterior and posterior aspects of the thorax A causal connection between the herpes zoster and the angina pectoris, Wertheimer thinks, cannot easily be denied

Zeitschrift fur Kinderheilkunde, Berlin

45 *1 222 (Dec 16) 1927*

Physiology of Taste Perception and the Sucking Reflex in Infants A Eckstein —p 1
Relation of Sucking Reflex to Gastric Function A Schmidt —p 19
Distribution of Taste Papillae in Children of Different Ages H Goldschmidt —p 28
Effect of Food Intake on Leukocytic Blood Picture in Premature Infants B Grabensee —p 36
Utilization of Maize Grits in a One Year Old Child H Murschhauser —p 45
Electrocardiogram of the Infant of the New Born and of the Prematurely Born E Burghard *and* A *Wunnerlich —p 56*
Method of Determining Glycogen and Carbohydrate Content of Liver E Burghard and H Paffrath —p 68
Glycogen Content of Human Liver at Moment of Death E Burghard and H Paffrath —p 78
Carbohydrate Content of Liver of Animal Fetuses at Different Periods of Gestation and Effect on It of Oxygen Deficiency and of Hunger in the Mother A Sake —p 93
Streptococcus Toxin and Antitoxin S Meyer —p 105
Change in Power of Hemolysis of Scarlet Fever and Erysipelas Strep*tococcus H Groenewald —p 110*
Interchangeable Use of Scarlet Fever Antitoxic Serum in Streptococcic Diseases and of Streptococcic Serums of Different Origins in Scarlet Fever and Other Streptococcic Diseases J Boente —p 135
*Experimental Anthracosis and Tuberculosis A Nohlen —p 173
*Semimicromethod for Determination of Wassermann Reaction in Cerebrospinal Fluid H Oster —p 186
Influence of Treatment of Parents on Frequency of Clinical Manifestations in Congenital Syphilis M Emanuel —p 191
Morbidity Among Premature Infants Receiving Fresh Air Treatment in *Düsseldorf Children s Clinic A May —p 198*
Dangers to Physicians Nurses and Personnel in Infectious Disease Clinics U Künzig —p 206

Experimental Anthracosis and Tuberculosis—In animal experiments Nohlen found that soot injected intravenously is deposited almost exclusively in the lungs and there leads to typical anthracosis with formation of connective tissue and small-cell infiltration Histologic examination in moribund *children (tuberculous meningitis* cavernous tuberculosis) receiving several soot injections of 1 cc showed a heavy deposit of soot and the formation of connective tissue with small-cell infiltration around the tuberculous foci The injections do not cause any disturbance of the general condition, they have a favorable effect on the course of the tuberculosis

Semimicromethod for the Determination of the Wassermann Reaction in the Spinal Fluid—With the semimicromethod of Nohlen and Ball Oster attained in the spinal fluid a 100 per cent agreement with the original method

Zeitschrift fur Kreislaufforschung, Leipzig

19 *745 776 (Dec 1) 1927*

Carbonic Acid Water Baths in Hypertonia F Lange and A Stormer —p *745*
Capillary Microscopy II Diathermy in Dysbasic Condition W Hollmann —p 751

Carbonic Acid Water Baths in Hypertonia—In Bohm s institute, Lange and Stormer report cases of pure hypertonia without arteriosclerosis are treated with water baths saturated with carbon dioxide At the beginning of the course of treatments the temperature of the water is 35 or 34 C and the duration of the bath is from three to five minutes The carbonic acid has the effect of producing a feeling of warmth in the skin, but water under 33 C should never be used In all cases there was a decrease in blood pressure of from 20 to 50 mg of mercury during the bath, and in nearly all cases the pulse became slower In many cases a series of baths brought about permanent decrease in the blood pressure The subjective symptoms (headache restlessness etc) were influenced favorably in all cases Rise in blood pressure during the bath shows either that it has lasted too long or that the temperature is too low Arteriosclerosis is a contra indication to the treatment

Zeitschrift fur Tuberkulose, Leipzig

49 *241 320 (Dec) 1927*

*Intestinal Tuberculosis H *Glatz —p 241*
Dangerous Trades and Prevention of Tuberculosis I *Zadek —p 254*
Gold Treatment of Pulmonary Tuberculosis C *Moewes —p 263*
Care of Sputum B Heymann and Pigger —p *274*
Disinfection of Tuberculous Sputum G Schroder —p *276*
Id E *Bergin —p 279*

Intestinal Tuberculosis—The histologic changes in the tuberculous intestine were studied by Glatz in fifty cases In all these cases the pulmonary changes also were studied macroscopically and in one half microscopically The productive, the exudative and the caseous forms of the disease could be histologically distinguished in the intestine It was further established that the changes in the intestine paralleled those in the lung

Zentralblatt fur Chirugie, Leipzig

55 *193 256 (Jan 28) 1928*

Pellagra Symptom Complex in Surgery E Melchior —p 201
Traumatic Hydronephrosis F Jumpertz —p 204
Elephantiasis of Penis and Prepuce H Mannheim —p 207
Early Diagnosis of Coxitis B Chatzkelson —p 209
*Treatment of Recurrent Inflammation of Sweat Gland of Axilla G Axhausen —p 212
Operative Treatment of Habitual Dislocation of Patella S O*trowski* —p 214
Hahn s New Stereoscope L Druner —p 216

Treatment of Recurrent Inflammation of Sweat-Glands of the Axilla—Axhausen treated recurrent infections of the axilla with injection of the patient s blood The method as applied in eighteen cases proved to be remarkably effective and rapid Areas of infiltration and of inflamed foci disappeared in three or *four days small areas of softening* became absorbed without perforating Healing of the area took place rapidly The tendency to recurrence disappeared

In only one case did a new abscess develop In this case recurrence was due to improper technic in injection Because injection is painful, a general anesthesia of short duration is advisable Axhausen uses a 30 cc. syringe with a rather large needle All of the apparatus used is moistened with a 1 per cent solution of sodium citrate to prevent coagulation From 40 to 60 cc of blood is injected under the skin of the axillary region His aim is to undermine rather than to circumscribe the area The value of the method is to be ascribed to the increase in the local tissue resistance He noticed the same beneficial effect when applying this method to ulcerations and granulations especially in ulcer of the foot and in roentgen-ray ulcer

Nederlandsch Tijdschrift v Geneeskunde, Amsterdam

71 *2681 2772 (Dec 24) 1927*

Spontaneous Cure of Total Stenosis of Esophagus Cure of Umbilical Hemorrhage in Infant B E J H Becking —p 2684
*Experiences in Active Immunization Against Scarlet Fever D van Dorp B Andreae and N Speelman —p 2692
Multiple Tumors of Larynx in Case of Kaiser Friedrich the Third H T Deelman —p 2695
Family Trees of Psychiatric Interest J Lobstein —p 2700
Intestinal Occlusion from Compression by Chyle Cyst S Hylkema —p 2713

Experiences in Active Immunization Against Scarlet Fever —Among 233 persons subjected to active immunization in a children's hospital van Dorp et al saw an acquired negative reaction return to positive and a positive reaction become more strongly positive in a number of cases They think it probable that in many of these cases the humoral immunity has been transformed into a latent cellular immunity, so that although no free toxin is present in the body fluids, a small quantity of toxin is sufficient to stimulate the allergic cells to the rapid production of antitoxin with resultant return to a negative reaction Thus in four of eight children in whom the Dick reaction had become positive after having been rendered negative, the reaction was again negative five days after injection of 120 skin test doses

71 *2773 2828 (Dec 31) 1927*

Therapeutic Application of Duodenal Sound G Jordans and H Bartels —p 2774
*Congenital Dislocation of Hip R J Harrenstein —p 2783

Dislocation of the Hip in Fetal Life —Harrenstein discovered dislocations of the hip in two fetuses of six and seven months From the subsequent changes it was possible to place the dislocation early in fetal life Anatomic peculiarities in the specimens suggest an incomplete anlage for the hip joint, with predisposition to dislocation Harrenstein regards pull on the part of the stretched spinal column as the direct cause of the dislocation The article is illustrated with photographs and diagrams

Bibliotek for Læger, Copenhagen

119 831 873 (Dec) 1927

*Capillary Nerves and Their Reflex Activity A Krogh —p 831
*Metabolism Through Capillary Walls A Krogh —p 841
Solubility of Concretions in Urinary Tract J Meyer —p 852
Pigmented Nevi in Human Skin (Benignant Melanoblastomas) A. Kissmeyer —p 864

Capillary Nerves and Their Reflex Activity —Krogh describes connections between the capillaries and both the sensory and sympathetic nervous systems and discusses reactions or axon reflexes in nerve tracts not yet anatomically demonstrated He pleads for the closest cooperation of anatomists, histologists, physiologists and clinicians in advancing the knowledge of capillary innervation

Metabolism Through Capillary Walls —Krogh says that the capillary surface varies greatly in the different tissues and seems to be related to the metabolic intensity Functional adaptation according to the varying intensity of metabolism is also indicated, few but regularly apportioned capillaries being open during periods of rest In general colloids are not diffusible through the capillary endothelium, but the capillaries in all tissues can become permeable to colloids The normal impermeability to albumin is of the greatest importance in the movement of fluids to and from the blood He describes the formation of exudates rich in albumin through abnormally increased capillary permeability and the mechanism of typical filtration edemas in nephrosis and in cardiac disorders

Ugeskrift for Læger, Copenhagen

89 1213 1228 (Dec 29) 1927

*Diagnosis and Medical Treatment of Cancer of Rectum Kramer Petersen —p 121

Diagnosis and Medical Treatment of Cancer of Rectum —On the basis of his twenty cases of rectal cancer, Kramer Petersen describes the various symptoms Rectal examination is advised in all cases with irregularity of defecation or rectal hemorrhage, and digital examination and, to a certain extent, endoscopy are stressed as being decisive in diagnosis Internal treatment of rectal carcinoma while only palliative, gives gratifying results He warns of the danger of ileus in internal treatment If suitable diet and mild cathartics do not relieve the tenesmus, mild narcotics are advised in suppositories with pantopon and belladonna In rectal hemorrhage, therapy falls short He holds rectal cancer to be surgical and stresses the internist s part in early diagnosis, including determination of the histologic form

90 1 28 (Jan 5) 1928

*Irradiation of Benign and Malignant Tumors E Collin —p 1

Radiotherapy of Benign and Malignant Tumors —The 1 266 nongynecologic cases treated in the Copenhagen radium institute, from 1920 to 1924, are reviewed by Collin The results in the 565 instances of benign tumor were particularly good Radium was mostly used, in some cases the roentgen ray For flat nevi freezing, electropuncture, and phototherapy are most successful, for pedunculated angioma excision is best The pigmented nevus verrucosus responds to radium therapy but is treated as a malignant tumor Of the 600 malignant tumors, eighty-four were skin cancers of the face, extensive inoperable or presenting difficulties for operation Of those treated with radium in the first three years 72 per cent were cured (13 per cent of the patients were not traced) Of the twenty six cases of lip cancer treated with radium in this period 77 per cent were cured (4 per cent not traced) Epitheliomas resistant to repeated roentgen-ray applications may disappear after one radium treatment He emphasizes that radium treatment or operation is indicated on recurrence of skin cancer after one or at most two roentgen-ray treatments, likewise, on recurrence of lip cancer after roentgenotherapy Roentgen-ray treatment of the regional glands is always given in connection with radium treatment of lip cancer and seems to reduce the number of metastases In cancer of the mouth and tongue, electrocoagulation and radium needles with roentgenotherapy seem most effective In cancer of the esophagus he advocates gastrotomy immediately on diagnosis followed by intensive roentgenotherapy The combination of colostomy and roentgen ray treatment is advised in difficult cases of rectal cancer He considers radium treatment of cancer of the glans penis with roentgenotherapy of the regional glands absolutely called for In epulis, immediate radium treatment is indicated There are twenty-seven illustrations

90 *29 48 (Jan 12) 1928*

*Red Light in Treatment of Smallpox J H Thierry —p 29
*Salicylic Poisoning After Intravenous Injection of Sodium Salicylate in Treatment of Varices E G Jørgensen —p 31

Red Light Treatment of Smallpox —Thierry's observations were made in a smallpox epidemic in Valparaiso, Chile In the 192 patients treated in red light from the first days of the disease, there was no noticeable effect on mortality, suppuration, or scars but with only one exception none of these patients developed eye lesions, while of those treated in daylight about 10 per cent had corneal pustules, about 3 per cent lost one eye and about 1 per cent, both eyes

Salicylic Poisoning After Intravenous Injection of Sodium Salicylate in Treatment of Varices —In Jørgensen s patient aged 47, a typical instance of salicylic intoxication followed an injection of 5 cc of 20 per cent sodium salicylate The three previous injections had been well borne He is unable to explain this sudden hypersensitiveness

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THE USE OF THE OUTPATIENT DEPARTMENT IN MEDICAL TEACHING *

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My purpose in this paper is to call attention again[1] to the importance of stressing teaching in and from the outpatient department We have been somewhat inclined, in our demands for hospital clinical material, to relegate to a place of minor importance the wealth of material offered by a well organized outpatient department We have been a bit prone, perhaps, to forget that we must teach the practice as well as the principles of medicine and we have forgotten that the outpatient department offers the best possible cross-section of what that practice comprises

The outpatient department, well manned with teaching personnel, adequately equipped and supervised, constitutes by far the most important factor in the teaching of clinical medicine to undergraduate students, or, to put it another way, a department capable of carrying 75 per cent of the undergraduate clinical teaching requires only an outpatient service with good quarters, proper equipment and trained teachers Seventy-five per cent of all undergraduate teaching in medicine can and possibly should be done in the outpatient department To defend such a thesis, one must consider the plan of a teaching outpatient department

PERSONNEL

(*a*) It requires far greater skill, training and real thinking power to make a diagnosis and outline the management of a case in the outpatient department than in the hospital where the house officer, the intern and the nurse have all recorded significant data as to the history and the physical and clinical pathologic manifestations before the arrival of the clinician

(*b*) Therefore, to place outpatient cases in charge of young, untrained clinical assistants and instructors defeats the plan and constitutes a ruthless waste of most valuable teaching material

(*c*) Instructors of professorial rank should be in charge of each clinic each day, serving not only more acceptably to patients and students but as teachers of junior clinicians

(*d*) There should be enough instructors in each clinic so that patients are not given perfunctory consideration but are handled as thoroughly and as expeditiously as private patients in a well managed office

(*e*) Arrangement of personnel should be such that there will be a chief of clinic each day in each department to whom all questions of diagnosis may be referred, and who will take the two or three most valuable teaching cases and discuss them with the assigned student group before the close of the period

(*f*) There should be a full-time fellow in each clinic in actual daily charge This fellow, a graduate student, manages the clinic and is in entire charge of the nursing and social service personnel

(*g*) Stenographers, nurses and social service clerks are a necessary part of the personnel

EQUIPMENT

Because of the paucity of equipment or the utter lack of it good teachers are literally forced out of outpatient teaching They refuse to be humiliated before students and patients by the lack of the essentials with which to complete a careful, thorough examination The proper equipment for good outpatient teaching is exactly that of the hospital lacking only the feature of continuous care in bed The physical plant should provide

(*a*) An adequate number of examining rooms, with adjacent dressing rooms, each equipped with the necessary examining furniture and instruments

(*b*) A small laboratory in each service

(*c*) A large laboratory of clinical pathology with adequate personnel, this laboratory to care for all types of pathologic work including serology and the preparation of vaccines

(*d*) A metabolism laboratory

(*e*) An electrocardiograph laboratory

(*f*) Radiologic and physical therapy departments with ample provision for fluoroscopy, cystography and pyelography

(*g*) A classroom available for each service

(*h*) Waiting space in each clinic, not one large common waiting room

(*i*) An accessible library

(*j*) A photographic and art department

This equipment is essential even though the teaching hospital occupies the same or an adjoining building unless the hospital laboratories and services are ample and are under full control of the outpatient services

The reasons for this emphasis on outpatient teaching may be briefly stated

First, it is advantageous to the student in the following ways

(*a*) He sees the beginnings of disease, not the end-results, and he learns to recognize subjective symptoms

(*b*) He learns the management of patients, the friends and relatives, and the control of the unruly child or the frightened mother He is face to face with the human side of medicine—with the responsibility

(*c*) He develops resourcefulness

(*d*) It is probably safe to assume that during the first few years of the professional career of the young practitioner he will be able to hospitalize only a small percentage of his patients. The objective of his training, therefore, must be to give him a thorough plan of the management of his patients from his office. Instead of feeling helpless because of lack of hospital facilities, he must acquire a definite and clear-cut idea of the wide possibilities of office and ambulatory management.

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* Read before the Annual Congress on Medical Education Medical Licensure and Hospitals Chicago Feb 7 1928

[1] Cutter I S Basic Principles of Clinical Teaching president s address read before the Association of American Medical Colleges 1924

(*e*) He learns to work rapidly, yet with accuracy, in history taking and in making physical examinations.

(*f*) He early learns the importance of forming a definite outline of management, the importance of therapeutics and the necessity of restoring the patient—the support of a family—to earning capacity at the earliest possible moment.

(*g*) Since the patient is his patient, the student stands or falls on his ability to diagnose the condition correctly and to afford relief.

Second, the instructor is benefited as follows:

(*a*) The skilful surgeon may be—often is—a poor teacher, largely because of his lack of training in teaching methods under a real clinical teacher. Teaching opportunities are valuable only as they afford instruction. Good teachers in the outpatient department will train good teachers. The head of the department, if he fully appreciates his opportunity and really desires to develop younger teachers, should act as chief of his service in the outpatient department at least once each week for a given period. On his presence will depend the inspiration and stimulus of a large number of younger clinicians.

(*b*) His contacts with his associates are educational to a far greater degree than with an academic curriculum; his ambition is stimulated under conditions that encourage study.

(*c*) His clinical horizon is definitely widened, and his contacts with the preclinical branches emphasized and sustained.

(*d*) Opportunities for research are legion.

I visited one of the outpatient departments a few days ago. Every student showed the keenest interest. They were loath to leave at the end of the period. A number of volumes from the library were scattered about the instructor's office, charts from the outpatient files of similar cases were in evidence, and a member of the pathologic staff had just departed after a half-hour conference with the students and instructor. I asked the instructor, a man of professorial rank, how he sustained such interest, for I knew that the scene was reenacted daily. He replied that he was doing exactly what Frank Billings had done with an outpatient group of which he was a member twenty or more years ago. He continued, "Every case is a problem, a nut to crack, a puzzle, and these boys have to solve the puzzle. All I do is to keep them from going too far afield. I try to make them think." "Do you like it?" I asked. "Like it!" he replied. "Why it's the greatest fun in the world. I get a real stimulus from every one of these lads and every case shows something just a bit different." "But," I said, "wouldn't you rather go back to your hospital clinic, such as you have given so successfully for both juniors and seniors?" "Not for a moment," was his reply. "I have seen more and learned more since I have had my outpatient service (approximately six months) than I saw and learned in my hospital clinic in as many years."

Budgets and schedules may need some revision or alteration, but, regardless of the grief incident to such shifting, if it means greater emphasis on outpatient teaching the grief and the cost are amply justified. To prepare men for the practice of medicine, we must teach more from that great group of cases that daily throng the outpatient department and that carry with them problems, not always medical, but just the type that every practitioner encounters daily.

Whether juniors or seniors shall be assigned to the outpatient departments does not make such a great difference. The most desirable plan, in my opinion, is to assign both groups to certain services, especially medicine and surgery.

CIRCUMSTANCES THAT INFLUENCE THE OBTAINING OF NECROPSIES *

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MINNEAPOLIS

The statements made in this paper are based on personal experience at the University of Minnesota. During the year 1927, the staff of the department of pathology performed 1,353 postmortems. Of these 1,023 were done in Minneapolis and nearly all the remainder in St. Paul. The department of pathology offers a free postmortem service to all hospitals and physicians in Minneapolis, but serves only the Ancker, St. Luke's and Miller hospitals in St. Paul. There were 4,729 deaths in Minneapolis in 1927 (not including stillbirths). When the stillbirths are deducted from the total Minneapolis necropsies, one finds that 900 of the 4,729 dead (approximately 19 per cent) were examined post mortem.

This figure includes 200 cases from the coroner's service, leaving 700 (15.4 per cent) in which the permission of relatives was secured. Aside from the coroner's cases, the great majority of deaths occurred in hospitals but there were a large number of cases from private homes. Apparently there is a much larger percentage of necropsies on patients who die in hospitals.

FACTORS AFFECTING POSTMORTEM EXAMINATIONS

The several factors concerned in the postmortem are (1) the physician, (2) the hospital, (3) the pathologist, (4) the relatives of the deceased, (5) the undertaker and (6) the age and sex of the deceased.

1. *The Physician.*—The most important factor in securing a postmortem is the attitude of the attending physician. Outside of the large hospitals where the influence of the institution is felt, the necropsies come from a progressive but relatively small percentage of physicians who are interested in correcting their own errors of diagnosis and therapy, as well as in the advance of medical science. As consent can occasionally be obtained for a postmortem merely for the asking, the physician who does not secure any at all is obviously at fault. The influence of a single physician in a hospital often doubles or triples its percentage of postmortems. Some individual physicians and some clinics secure as high as 80 or 90 per cent of postmortems. These instances are so impressive that one can hardly escape the conclusion that the first step in establishing a postmortem service in a community is to get the physicians in such a frame of mind that they will want to see postmortems.

Such success as we have had in Minneapolis is largely due to cooperation with physicians. The pathologist arranges the time to suit the convenience of the physician, so that he will lose as little time as possible from his practice The lesions are demonstrated and an effort is made to correlate the clinical symptoms and physical manifestations with the postmortem changes A full typewritten report is mailed the physician a few days after the necropsy is completed The observations of junior assistants are checked by one of the senior members of the staff before the report is sent out No charge is made either to the physician or to the relatives

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* Read before the Annual Congress on Medical Education, Medical Licensure and Hospitals, Chicago, Feb. 7, 1928.

A free service is very important In cities in which medical schools are situated, it is often possible to establish a free service through the department of pathology, since necropsies are an important part of medical teaching In cities in which there is no medical school, the problem is more difficult but by no means insurmountable The larger hospitals should have a competent full-time pathologist Smaller hospitals and groups of physicians might combine to pay the salary of a pathologist

2 *The Influence of the Hospital* —The action of the Council on Medical Education and Hospitals in requiring at least 10 per cent of necropsies in approved hospitals is to be highly commended and is already showing good results The usual cause of the prevailing low percentage is indifference on the part of the staff or the superintendent The staff, as well as the superintendent, wants to keep the hospital on the approved list and consequently will make some effort to comply with the regulations When the postmortems are properly performed, the interest aroused in the staff may make further compulsion unnecessary The superintendent who wishes to suppress unnecessary and misdirected surgical operations soon learns the helpful influences of the postmortem table It appears that the best way to proceed to increase the number of postmortem examinations is through the administrative agencies of the hospitals

3 *The Pathologist* —The chief responsibility for the success or failure of a postmortem service rests with the pathologist If he knows his subject thoroughly and has an agreeable personality, he can easily make physicians want to see postmortems He should be trained in the diagnostic side of clinical medicine, so that he can interpret symptoms and physical changes in the light of the lesions disclosed at necropsy An untrained pathologist soon kills all interest among the physicians, since no one has confidence in his diagnoses The practice of having the postmortems performed by a member of the clinical staff is a poor makeshift It requires as much time to train a pathologist as any other medical specialist There are very few young physicians at the present time specializing in pathology, largely because the financial rewards are less than in other lines of medical practice There will be a scarcity of first class men until this condition is improved

4 *The Relatives of the Deceased* —The attitude of the relatives reflects the local public attitude Public sentiment can be built up slowly when all the best physicians cooperate in asking for necropsies and educating the public as to their value There are no set formulas for securing permission The physician who has the confidence of the family is the one most likely to secure consent Many persons give permission as a favor to the physician whom they trust The educated are often influenced by a desire for an exact diagnosis or a wish to advance medical knowledge We rarely secure consent for a necropsy on a Jew The objections of Jewish people seem to be sentimental rather than religious Jewish physicians should do all in their power to counteract this sentiment, since a relatively large proportion of young Jews enter the medical profession and depend on necropsies for a part of their education An appeal to the educated Jewish public to contribute their share toward the education of their sons might be successful

5 *The Undertaker* —Cooperation with undertakers is necessary for a successful postmortem service The relatives will usually refuse permission if the undertaker tells them that the postmortem will mutilate the body or that he cannot embalm it properly after a postmortem On the other hand, an undertaker may secure permission when the physician fails We have made a great effort in Minneapolis to cooperate with the undertakers Only two or three now object seriously to postmortems I have attended their meetings and discussed their objections with them personally The great majority are anxious to have the good will of the medical profession Their first difficulty is in learning how to embalm a body that has been examined post mortem As soon as they can do this well, their main objection is removed The university extension department offers a six months' course to embalmers, and the students are taught how to embalm such a body Practically all Minneapolis undertakers can now do this satisfactorily The pathologists are always careful to leave the vascular system intact as far as possible, so that embalming will not be difficult Incisions that show on the body after it is dressed are avoided Whenever embalming does not interfere, we allow it to be done before the postmortem A kindly personal interview will often clear up disagreements The postmortem is done as soon as possible in order to give the undertaker time to prepare the body for burial As a whole, the undertakers are willing to do the extra work required of them for the sake of accommodating the medical pro-

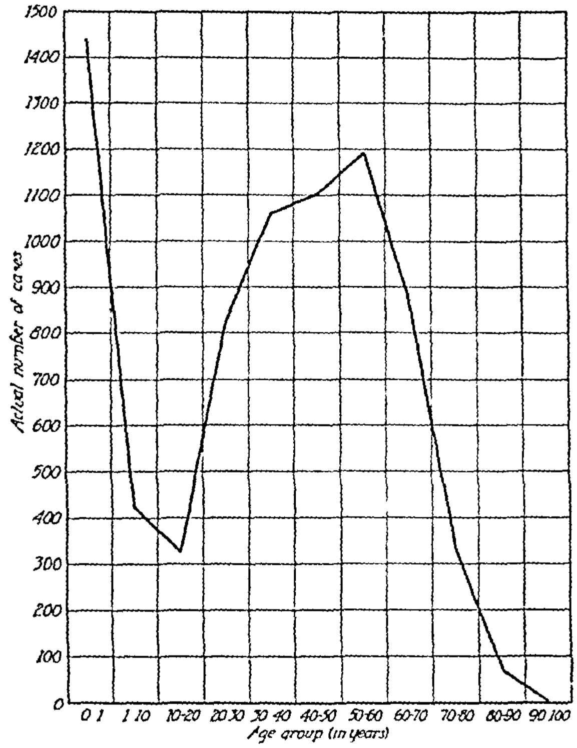

Chart 1 — Age incidence in necropsies

fession and many can be appealed to on the basis of advancing medical knowledge

6 *The Influence of Sex and Age*—A study of our records shows an approximately equal number of males and females up to the age of 30 years, but after that age the males predominate In the coroner's service there are three times as many males as females If only those cases in which permission was necessary are considered, there are about four males to three females in persons over 30 years of age It appears, therefore, somewhat easier to secure consent for a necropsy on a man than on a woman after the age of 30 years

The age distribution of necropsies is shown in chart 1 The sharp drop in the curve after the first year was not due to difficulty in securing postmortems but to the lower death rate at this period This may be seen by a comparison with chart 2, which shows the actual deaths in Minneapolis in 1926 The number of necropsies corresponds rather closely to the actual number of deaths Age, therefore does not have any appreciable influence on the securing of a postmortem

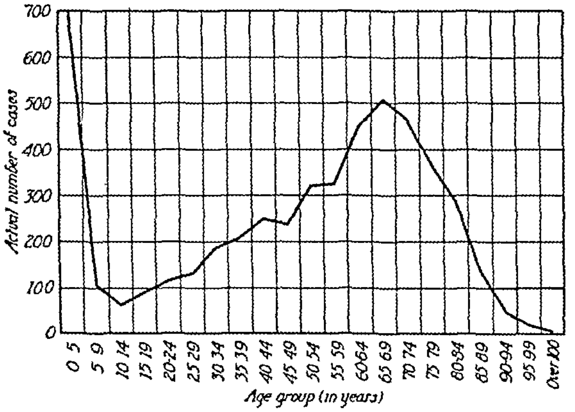

Chart 2—Actual number of deaths in Minneapolis in 1926

SUMMARY

During 1927, 1,353 necropsies were performed by the department of pathology of the University of Minnesota Of these, 1,023 were from Minneapolis, and, with the deduction of 123 stillbirths, this represents 19 per cent of the deaths in the city for that year

The most important factor in increasing the number of postmortems is to get physicians deeply interested This can be accomplished by a competent pathologist who is familiar with the problems of clinical diagnosis and able to teach

No postmortem service will be successful if it is in charge of a poorly trained pathologist

The administrative agencies of the hospitals can secure a fair percentage of postmortems if they really try to do so

Public sentiment in favor of necropsies can be built up in a community if a majority of the physicians cooperate

If undertakers are given helpful and considerate treatment, the great majority will not object to postmortem examinations

The sex of the deceased does not affect the securing of a postmortem examination up to the age of 30 years, but after this age it is somewhat easier to obtain permission in men

The age of the deceased does not affect the problem of securing permission for necropsy

THE "NURSING SHORTAGE"

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NEW YORK

This is a report of progress The American Medical Association is one of the seven national organizations officially represented on the Committee on the Grading of Nursing Schools For the year 1927 it contributed $5,000 for the support of the work Other organizations and individuals also contributed generously This is a brief summary of what has been done with the money

The chief activity of the year has been in connection with the "Supply and Demand" study It was felt by the committee that the actual grading of schools could not safely be undertaken until more was known as to the causes for the prevailing unrest, not only in the nursing profession itself but in the ranks of physicians, hospital and public health workers, and patients who come in contact with nursing problems Accordingly, the first year has been spent in gathering reports from representatives of all these fields to answer the questions

> How does the supply of nurses compare with the demand
> Why are some doctors unhappy about nursing?
> Why are some nurses unhappy about nursing?

and other similar problems

In making this study the committee has gathered reports of different kinds from members of all the groups concerned, in all parts of the country To date there are in the grading office about 35,000 reports from nurses 27,000 reports from physicians, 1,500 reports from hospitals, 2,000 from patients, 300 from public health organizations, and 400 from nurse registries, and every mail brings more The response has been far in excess of expectations In a surprisingly large proportion of the cases the writers have not only answered the committee's questions but have in addition added paragraphs of comment and explanation so that the results are not unlike those which would have been secured by many thousands of personal interviews It is an illuminating mass of testimony

By this coming June, the committee hopes to publish a comprehensive report of its data Final predictions cannot yet be made with any certainty, but the tabulations so far seem to indicate certain conclusions as reasonably probable

NO NURSING SHORTAGE

A few years ago—about 1919 and 1920, to be specific—there was a sudden sharp decline in the number of applicants for admission to training schools During the war years the schools had grown with great rapidity, and the sudden drop was therefore all the more startling The phenomenon was probably partly due to postwar psychology, and more definitely to the financial condition of the country at that time It is probably true in nursing schools—as it has been found to be true in most others—that in periods of financial depression young persons tend to go to school but in periods of prosperity they drop out The year 1919 and the first half of 1920 were periods of exuberant national prosperity The combination of postwar reaction against self-sacrifice, and of good times enticing prospective wage earners away from school and into industry, probably accounts for the sudden and decisive drop in nursing school enrolments

The condition did not last long in nursing education By 1921 enrolments were greater than they had ever been before, but the alarm had been sounded, and the statement that there was a nursing shortage had received general acceptance throughout the country When the Committee on the Grading of Nursing Schools first began its work, one of the problems seriously discussed was methods for meeting this shortage, but, in line with its adopted policy, the committee decided to find out the facts about the alleged shortage before proceeding to discuss remedies for it The results have been unexpected It already seems fairly clear that the returns are going to show that there is no nursing shortage Instead, there is considerable evidence to suggest that *so far as gross numbers are concerned* (please note the italics) there is an oversupply of nurses The accompanying chart, showing the medical and nursing schools in the United States at ten year periods since 1880, throws light on the problem So far as available records show, there were, in 1880, 100 medical schools in the United States In 1890 there were 133, in 1900, 160 Then came the great forward movement in the medical profession for cutting down the number of schools and improving the quality of medical education so that by 1926 there were only seventy-nine medical schools in the United States

Nursing shows a totally different history In 1880 there were only fifteen nursing schools in the entire country In 1890 there were thirty-five, in 1900, 432, in 1910, 1,129, in 1920, 1,775, and in 1926, 2,155 The growth of nursing schools has been astounding and unchecked

Each year about 4,000 graduates are added to the ranks of the medical profession, but about 18,000 graduates are added to the ranks of the nursing profession Moreover, while many hundreds of those new nurses drop out early in their professional life, half of them will remain in active nursing for at least eight years and perhaps longer, and more than a third will stay in the nursing field for twenty-five years or more When one couples with these facts the realization that old schools are growing, and new schools of nursing are springing up every year, that sickness is going out of the home into the hospital, that cases are growing shorter, and that the people of the United States are apparently in better physical condition than ever before, the future looks none too encouraging for the nursing profession—unless, like the medical profession twenty years ago, it begins to think about where it is going

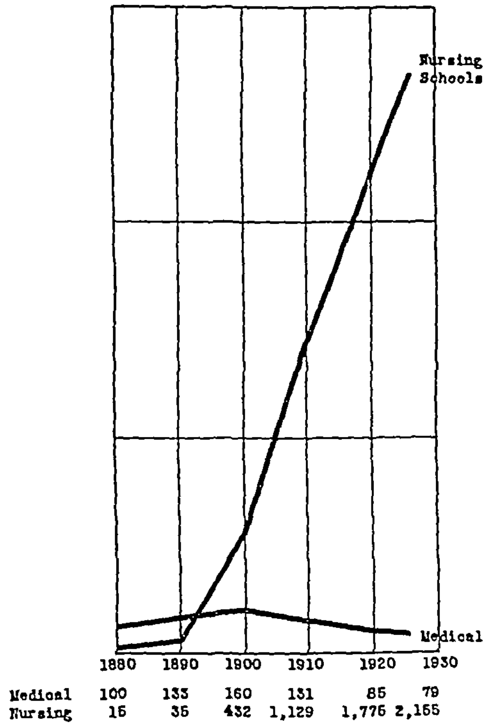
The results of this overproduction of nurses are already visible On the backs of their reports many physicians have commented on unemployment conditions in their communities Of those who have done so, three fourths say that there is "no nursing shortage" to one fourth who say that more nurses are needed

Among the visiting nurse associations, in ten states studied last spring, there were four applicants for every position filled The most recent of the Grading Committee studies—that of hospital, central, and commercial nurse registries in all parts of the country—is just getting under way, but already returns from 393 registries report serious unemployment conditions In answer to the committee's question "Would you like to have more nurses encouraged to move to your city?" 322 say "no" and only eighteen say "yes"

NOT A SHORTAGE BUT INADEQUATE DISTRIBUTION

The figures so far gathered by the Grading Committee seem to show that there are waiting lists on almost every registry Yet the fact remains that there are still many calls for nurses that go unanswered The country physician does not find it easy to get a competent graduate nurse for his patient Nor does the obstetrician who has a patient to be delivered in the home, or the pediatrician with the sick child It is often extremely difficult to secure competent nursing care in contagious cases, or for mental or nervous patients for alcoholic addicts or for male patients It is difficult to fill calls for twenty-four hour duty, and home cases of all sorts are far less popular than those in hospitals Evidence to show that this is true is being gathered not only from physicians but from patients, registries and from the nurses themselves The testimony from all groups concerned is in remarkable accord

Moreover, the same condition holds true in fields other than that of private duty In the field of public health, with four applicants for every position, there are still many openings left unfilled Some hospitals are having difficulty in getting high grade general duty graduate nurses, and there is a marked demand for nursing school instructors The paradox in nursing today seems to be that while there is probably an oversupply of nurses there is still a great demand for nurses which is not being met



Medical and nursing schools in the United States from 1880 through 1926

MORE FLEXIBILITY OF SERVICE

Thoughtful nurses and physicians who have been studying the situation are suggesting three possible solutions The first is that the profession should shut the doors of its nursing schools to any applicant who does not give reasonable promise of becoming an ethical and competent nurse after graduation

Second, it is being urged that the nursing profession devise some method for keeping track of what its graduates are doing In public health, and to some degree in the hospitals, all the nurses work together in groups The beginner is taught and guided through friendly leadership, until she becomes able to carry full respons bility for groups of her own, and those members who are not primarily executives but are effective and valuable staff workers are carefully placed in the positions in which each one can render valuable nursing service It is suggested that this principle of keeping track of what its members are doing and of helping each one to fit into the place where she can be happy and efficient is one which the nursing profession might well apply to private duty as well as to public health and institutional work

The third, and perhaps most important suggestion, is that the nursing profession should "study its market" From the way in which the private duty system now operates, one might reasonably assume that the nursing profession believes all nurses to be exactly alike, that the inexperienced nurse is worth as much as the most experienced, that every case is equally difficult, and that every patient needs exactly twelve hours of nursing care each day There seems to be as yet very little effort to provide a flexible nursing service, with different degrees and qualities of nursing care, at different costs, for different periods of time

The working out of such a flexible service would undoubtedly tax to the utmost the intelligence and patience of such thoughtful nurses as were to assume leadership in the movement It would take great tact to convince private duty nurses that the sorts of cases to which they are assigned, the days and hours they work, and the amount of pay they receive should depend on the kinds of nurses they are and the kinds of work they do Yet, in the long run, it would seem that the way to attract and hold high grade bedside nurses in private duty is to offer appropriate rewards for their skill It is urged as reasonable that extremely difficult cases should call for the most able and experienced nurses, working short hours and for high pay It would seem equally reasonable that easy cases be assigned to the less able or less experienced nurses, at longer hours and at somewhat lower pay Inexperienced nurses according to this suggestion, would start at the bottom, but as the nurse improved in the quality of service she was able to render, she would naturally join the ranks of those higher up, who in return for better pay and shorter hours were carrying heavier responsibilities

It is the opinion of thoughtful students of the situation that the solution of the "private duty problem" depends largely on the success with which the nursing profession is able to transform at least part of its present free lance stereotyped private duty system into a carefully organized, varied and adaptable service, constantly alert to meet the true needs of nurses and patients Hourly nursing and group nursing might be incidental parts of the scheme, but the essential principle would seem to be the recognition that some nurses are more valuable than others, and some cases more important and difficult than others, with a frank adjustment of assignments, hours and pay to meet these two facts

It is not believed that this process of adjustment will be rapid Probably many, if not most, of the nurses already in the field of private duty will continue to function just as they are doing now But as new thousands are added every year, it seems inevitable that they be inducted into some more flexible form of nursing service The process would necessarily, at first, be slow and difficult It is the opinion of those who have been following developments most closely that most of the initiative, the actual thinking and planning, must be carried through by the nursing profession itself If it is to be successful, however, the reorganization must receive the sympathetic, intelligent and patient support of the medical profession If the members of the medical profession feel that a more adaptable form of private duty service is desirable, they can hasten its development by many years if they will take the time to read the nursing journals, talk with the more thoughtful members of the nursing profession, and lend their sympathetic and understanding support to whatever local experiments the nurses get under way

370 Seventh Avenue

A HOSPITAL PHYSICAL THERAPY DEPARTMENT

JOHN S COULTER, M D
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CHICAGO

The basic function of a hospital is to give its patients adequate service Scientific investigations in the last few years have placed physical agents on an equal basis with drugs as effective curative agents Physical therapy is of great benefit in a vast range of medical and surgical conditions Therefore every hospital needs some physical therapy

In considering the establishment of a physical therapy department in a hospital, the following should be determined the attitude of the hospital staff toward the subject, the class of patients treated in the hospital, the costs of the department, the equipment necessary, the location of the department in the hospital, the space necessary, the records required, and the personnel

THE HOSPITAL STAFF

The medical profession is by no means in accord on the value of this form of treatment This difference of opinion is due not to the lack of value of this form of therapy but to the commercialization of this type of treatment and to the activity of the makers of various types of apparatus in making exaggerated claims for their machines As scientific investigation goes on and the medical schools establish departments for teaching and research along these lines, more of the medical profession will become acquainted with the scientific value of this form of treatment But at the present time the opinions of the hospital staff in regard to the classes of cases that they believe need physical therapy must be considered

Economic considerations in regard to the staff and its relations to the patient are important Many physicians see in the physical therapy department just another means of adding to the hospital costs Now, while it has been proved that properly administered physical therapy will shorten the hospital stay and reduce the ultimate cost of the patient's bills, the staff must be convinced of this before any large amount of money and space is devoted to this department This can be done best by starting with a small department, expert personnel and a careful selection of cases

The staff must also be consulted as to the mode of physical therapy it wants used in its cases This will largely determine the equipment of the department

The attitude of the staff toward the treatment of outpatients by the hospital department is important Frequently, physical therapy must continue for weeks after the primary medical and surgical treatment has ceased Many physicians believe that it is better to discharge patients from the hospital and the hospitalizing influences Some physicians have installed expensive physical therapy departments in their offices, and these men are naturally opposed to the hospitals treating patients after they leave If the department does treat outpatients, these physicians will not start the treatment of their patients in the hospital, as they do not want them to continue in the hospital department after they are discharged These men are the ones who would use physical therapy the most, so this is an important point

CLASS OF PATIENTS TREATED IN THE HOSPITAL

The type of patients treated in the hospital bears an important relationship to the equipment and space of the physical therapy department This analysis must be deeper than a general classification of the number of medical and surgical cases, or the hospital will get into the same situation that one did recently This hospital was starting a new physical therapy department, and based its analysis of the cases on the number of beds it had in relation to another hospital in which there was a large physical therapy department These two hospitals were apparently nearly alike, so the hospital in question started a department in a good location, with good equipment and space, and efficient personnel But in spite of this the department found that it had too much equipment, was too large, and did not need so much personnel The hospital was in a residential district of a large city in which there were few accident cases, although the surgical service was large and active most of the cases were acute, not requiring physical therapy, and there were no orthopedic specialists on the staff or any children's wards This physical therapy department should have been started with half its space and equipment, and less personnel

THE COST OF THE DEPARTMENT

The cost of the department is an item that the hospital superintendent must consider This can be estimated only by considering what other hospitals are doing For example, table 1 shows the income and expenditures during 1926 of the physical therapy department of a general hospital of 275 beds, located in Chicago

Table 1—*Income and Expenditures of Physical Therapy Department of a Hospital in 1926*

Income		$23 172 00
Expenses		
Salaries and commissions	$10 149 71	
Rental @ $0 50 per sq ft per month		
4 months @ $250 00	1 000 00	
8 months @ 325 00	2 600 00	
Linen, 4 months @ $15 00	60 00	
8 months @ 30 00	240 00	
Light and power		
4 months @ $10 00	40 00	
8 months @ 20 00	160 00	
Interest charges	300 00	
Meals at noon—personnel $0 50 each	500 00	
Sundry items repairs and supplies	182 79	
		$15 232 50
Profit		$7 939 50

EQUIPMENT

Physical therapy is not machine therapy, and while expensive appliances make a fine showing and produce a great impression on the patient, it is to be remembered that the service rendered in physical therapy is dependent on the knowledge of its personnel Hospitals who go into this field with the idea that it comprises only machine therapy and expensive equipment will have a bitter feeling toward the whole subject and their machines will soon be covered with dust, as are those in many of the hospitals that bought static machines and complicated exercise apparatus years ago

The instruments used in this department should be of standard make, and the standardization of apparatus is now being done by the Council on Physical Therapy of the American Medical Association Although work of much value has already been done by this council, it will be some time before physical therapy will be on as rational a basis as drug therapy Apparatus should be purchased from reliable manufacturers and from those companies that are prepared to furnish good service in repairs and in replacing broken parts This is most important if the department is small and there are only a few machines of each type

Table 2—*Suggested Equipment for a Physical Therapy Department*

Ultraviolet Radiation	
Mercury quartz vapor lamp air cooled and water cooled with applicators etc	$1 253 00
Massage Muscle Training and Therapeutic Exercise	
4 treatment tables with pads or mattresses	100 00
1 mirror on stand for posture training	30 00
1 wheel for shoulder exercise	10 00
1 Sayre head sling	16 00
1 wrist cone	5 00
1 ankle exerciser	4 00
1 stall bar	24 00
1 elbow exerciser	4 00
1 shoulder abduction ladder	3 00
1 rowing machine	30 00
1 foot inversion tread	3 00
1 table for hand exercises complete	30 00
Galvanic and Sinusoidal and High Frequency Currents	
1 galvanic and sinusoidal machine and accessories	680 00
2 high frequency machines and accessories	1 100 00
1 arm whirlpool bath	75 00
1 leg whirlpool bath	75 00
2 heat lamps with 1 500 watt bulbs on stands	50 00

Some of the more simple equipment can be made by the hospital carpenter and plumber The carpenter can make the treatment tables, 6 feet 6 inches long, 30 inches wide and 30 inches high, with a shelf 12 inches from the floor The exercise apparatus can also be made along the lines of present-day equipment For instance, for shoulder abduction an 8 foot plank, 1 inch thick and 4 inches wide, with 1 inch steps on the outside set against the wall, is used, for flexion and extension of the shoulder, a wheel 5 feet diameter with a handle on it is fastened to the wall so it will turn A pulley with ropes and weights makes an excellent elbow exerciser A tapered cone of wood, 3 feet long, 1 inch in diameter at one end and 4 inches in diameter at the other end, set between supports, serves as a wrist and finger exerciser in cases of stiff fingers with limited flexion, the narrower part being used as the condition improves These and many other types of apparatus can be made by the carpenter The plumber can make the whirlpool baths from the descriptions given in the various books on hydrotherapy

Table 2 gives a suggested list of equipment for a physical therapy department

This equipment was purchased for the department in one hospital in which a space of 30 by 24 feet was allowed This room was divided into seven smaller treatment rooms with steel partitions 7 feet high, doors protected by curtains, at a cost of $400

LOCATION OF THE DEPARTMENT

As light and exercise are important physical means of treatment, the physical therapy department should be located where there is plenty of light and good ventilation, and not as often happens, in a basement It should be convenient to the wards or rooms from which most of the patients will come, so that the ambulatory patients can easily reach the department, and so that the apparatus from the physical therapy department can be taken to the patient's bedside When outpatients are to be treated in the department it should be located on the ground floor or as near to it as possible so that these patients do not have to go through the hospital corridors

SPACE

In old hospitals starting physical therapy departments the location and the amount of space for this department are determined by the free space not used Figure 1 shows a suggested floor plan for a hospital of from 200 to 300 beds The office should have ceiling partitions and a door that can be locked The other rooms may be separated by fiber board or steel partitions, 7 feet high and 6 inches from the floor with curtains at the doorways This allows the technicians ready access The office serves as an examining room, a dressing room, and a place where patients needing electrodesiccation or electrocoagulation can be treated, if necessary There should be a room for massage and therapeutic exercises, one for ultraviolet irradiation, two or three rooms for heat, diathermy, sinusoidal muscle stimulation or massage, and a room for the whirlpool baths This plan gives seven rooms in a space 30 by 24 feet

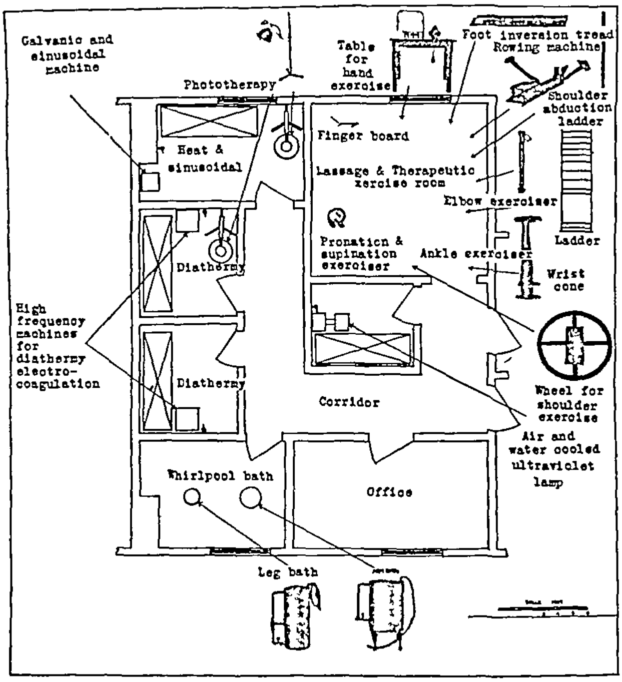

Galvanic and sinusoidal machine
Phototherapy
Table for hand exercise
Foot inversion tread
Rowing machine
Shoulder abduction ladder
Heat & sinusoidal
Finger board
Massage & Therapeutic exercise room
Elbow exerciser
Ladder
Pronation & supination exerciser
Ankle exerciser
Wrist cone
Diathermy
High frequency machines for diathermy electro-coagulation
Diathermy
Corridor
Wheel for shoulder exercise
Air and water cooled ultraviolet lamp
Whirlpool bath
Office
Leg bath

Fig 1 —Floor plan of a hospital physical therapy department

The separate room type of construction is necessary in all hospitals treating private patients, but in county hospitals or in hospitals treating only industrial cases the division into rooms may be by means of sheets used as curtains on wires stretched 7 feet above the floor In either of these types of construction, one technician can keep three patients under treatment at a time if they are given the proper appointments

The floor covering should be soft, as the technicians are on their feet constantly and a hard concrete floor will soon cause foot strain and consequent lowered efficiency, if damp, the floor will act as a ground for the electric current Linoleum or a rubber composition is most efficient A tile or concrete floor should be used for the whirlpool bathroom

For the electric current it is a great advantage to have outlets placed in pairs, so that direct and alternating currents are available at all places These two plugs should be entirely different so that no mistake can be made in getting the plugs mixed It is important to have at least one set of plugs in each treatment room

A large sink with hot and cold water should be conveniently located so that the technician can have ready access to it at all times

RECORDS

The following records are suggested, but may be altered to suit local conditions

1 A treatment record sheet, as shown in figure 2, to correspond in size to the other hospital history sheets The referring physician fills out the top lines down to the result desired The director of the department writes the treatment to be given, and the technician keeps the attendance record and the progress noted

2 A patient's card, which should correspond to the card used in the other departments and which will show the time for the next appointment and the amount to be paid for the treatment

3 A record book, so arranged as to give the necessary information for a monthly and yearly report

4 A diagnosis card, which gives the diagnosis at the top and contains a list of the patients with this diagnosis, giving the hospital history number, treatments and results

PERSONNEL

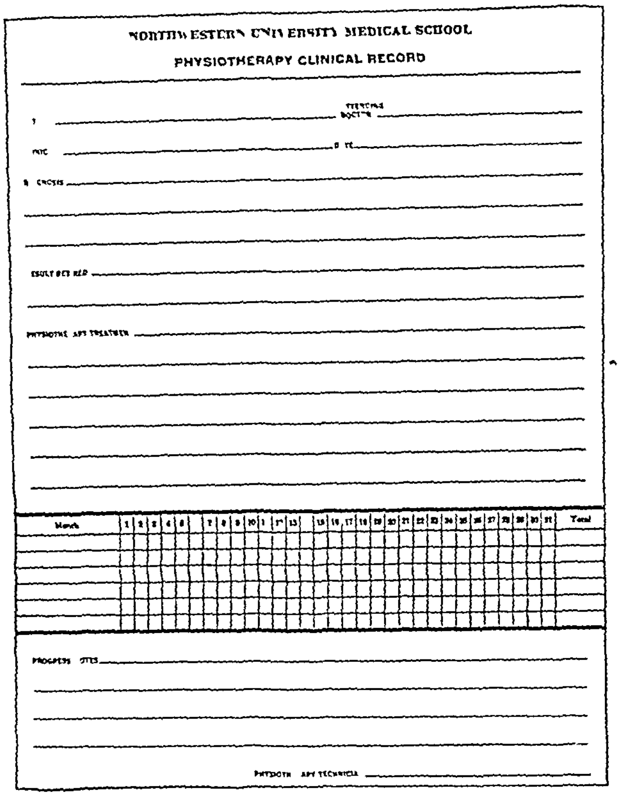
The most essential requirement for a good physical therapy department is a properly trained personnel, because physical therapy is not machine therapy, and the majority of the patients from the surgical and orthopedic departments, as those with fractures, nerve injuries, infantile paralysis and spastic paralysis, need massage and muscle training for which no machines have been invented

Supervision of this department should be by a physician It is realized that few hospitals can pay a salary for this, and that it is hard to get good work for nothing One criticism that is being aimed at physical therapy departments is that patients are kept there too long and that some are being unnecessarily treated This is especially true in industrial cases in which the patient is drawing compensation and is perfectly willing to come indefinitely for treatment It is not believed that decisions on the length and kind of treatment can properly be left to a technician A physician should examine the new patients to prescribe the treatment, which has been suggested possibly by the referring physician, should see each patient every two weeks to decide whether the maximum improvement has been reached or whether the treatment needs changing, and should examine patients at other times at the technician's request In few hospitals would this require more than one hour daily For this work the physician could receive a small percentage of the department's receipts, or he could be given permission to treat his own patients there for only the cost of the technician's time

Treatments should be administered by properly trained technicians A properly trained technician is one who has completed a high school course, a course in a recognized school for nurses or a physical education school, and a course in a recognized school of physical therapy, and who has had one year s experience in this work within two years of graduation from the school of physical therapy In small hospitals this type of technician can be employed part time, serving several hospitals or doing work outside for some physician

CONCLUSIONS

Each hospital will have a different problem in establishing a physical therapy department, and the foregoing considerations are suggestions that will have to be modified to suit the individual hospital There is one statement however, that will apply to every hospital physical therapy department, and that is that the most essential requirement for a physical therapy department is properly trained personnel, for without efficient personnel the department will not be a success



NORTHWESTERN UNIVERSITY MEDICAL SCHOOL

PHYSIOTHERAPY CLINICAL RECORD

Fig 2—Record sheet used in physical therapy department of Northwestern University Medical School

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Development of Science of Medicine—A great mass of knowledge about the details of disease has been accumulated, and this knowledge is about as accurate as it is in the other domains of biology This kind of knowledge in recent years has been extending at an enormous rate Journals devoted to medicine in its various aspects number many hundreds The science of medicine is developing centrifugally, not centripetally One important reason for this is that it is so greatly exposed to utilitarian demands In his efforts to be aware of all the facts, the physician has no time for contemplation of their meaning In his fear of overlooking that which may be of value in prolonging the life of the individual, he fails to discover that which may be of importance for the race We even lack accurate definitions of disease, injury, recovery, death Possibly such definitions can never be made Scientists are not so sanguine as they once were of reducing knowledge of the universe to formulae But the science of medicine, as all other sciences, demands that efforts be made in this direction In spite of all that has been said, however, the heterogeneity that exists in the knowledge about disease is no greater than that in some other branches of knowledge, the science status of which is never questioned—Cole, Rufus *Science* **67** 51 (Jan 20) 1928

SUBACUTE COMBINED SCLEROSIS

REPORT OF A CASE, ASSOCIATED WITH PERNICIOUS ANEMIA, IMPROVED BY MURPHY-MINOT DIET *

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Lichtheim,[1] in 1887, first called attention to neurologic changes in cases of what is now called in this country pernicious anemia In 1891, Russell and others[2] called attention to the fact that neurologic symptoms might precede as well as follow the blood picture, with its attendant chain of symptoms, commonly known as pernicious anemia In a very exhaustive article on this class of cases Russell, Batten and Collier[3] stated that "anemia does not form one of the important symptoms of subacute combined sclerosis, is not constant, and, when present, is not of the primary type" In other words, they were attempting to prove that subacute combined sclerosis was not a result of the anemia and was not closely linked with it from an etiologic standpoint Although the total dissociation they attempted is not accepted, they performed a valuable work in showing that subacute combined sclerosis does not necessarily follow the usual pernicious anemia picture, but may precede it, and that the two conditions are probably results of the same, or closely allied, etiologic factors[4] which at present are conceded by most to be unknown

The pathologic picture of subacute combined sclerosis is given by Russell, Batten and Collier[3] as consisting of a focal destructive and a systemic lesion

The first lesion, they say, is at the beginning a swelling of the medullated sheaths with the axis cylinders apparently unaltered Next, the sheaths undergo fatty degeneration with absorption, and simultaneously the axis cylinders disappear, leaving a space surrounded by the connective tissue of the cord These at times reach a considerable size, owing to the fusion of several so formed, later, more or less fibrosis appears with scarring and loss of all structure

The second, or systemic, degenerative process affects the long tracts of the cord in a manner similar to that seen in transverse lesions of the cord, eventually leading to fibrosis and scarring

Attempts at treatment have all been attempts at treating the pernicious anemia, with practically nothing suggested for the neurologic condition The procedures suggested have been, as is well known a change in climate, a new hygienic regimen, surgical measures, as splenectomy, the administration of drugs such as iron and arsenic, a change in the diet, and transfusion A detailed discussion of any of these would be useless repetition

The results obtained have been far from happy, as is attested by Greene[5] and Elsner,[6] so far as the blood changes are concerned, the tendency to periods of remission in pernicious anemia makes any conclusions as regards cures, based on less than years of observation, untrustworthy The lack of sufficient conservatism has been the basis of most of the claims for the remedies of the past, when more than temporary aid was claimed for any measure

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* From the Department of Medicine University of Maryland School of Medicine

[1] Lichtheim Verhandl d Kong f inn Med 1887 Neurol Centralbl **6** 235 1887

[2] Cited by Reese H H and Beigler S K Subacute Combined Sclerosis of the Spinal Cord and Pernicious Anemia Am J M Sc. **171** 194 (Feb) 1926

[3] Russell J S R Batten F E and Collier Subacute Combined Degeneration of the Spinal Cord Brain **23** 39 110 1900

[4] Hurst A F An Address on Addison s (Pernicious) Anemia and Subacute Combined Degeneration of the Spinal Cord Brit M J **1** 93 100 (Jan 12) 1924

[5] Greene C L in Tice Frederick Practice of Medicine Hagerstown Md W F Pryor Company Inc **6** 815 816 1917

[6] Elsner H L Monographic Medicine New York, D Appleton & Co 1916 pp 519 526

Despite the necessity for conservatism in presenting any remedial measure as a cure, one seems justified in accepting the diet introduced by Murphy and Minot[7] last year as at least a valuable aid in improving to a marked degree the patient's condition It will take years to determine its final value properly

Although many dietary suggestions have been made in the past, this diet is the first offered with some specific end in view[7] Murphy and Minot originally advocated large amounts of mammalian liver, green vegetables and fruits, because of their ability to induce red blood cell formation experimentally, and small amounts of fats, because of their tendency to discourage this activity Following a longer period of clinical observation, however, Minot and Murphy[8] stated that liver alone is the essential requisite to increased red blood cell formation, while fruits, red muscle meat and green vegetables are desirable but not necessary Further, they state that recent tests indicate that large amounts of fat may not inhibit the formation of these cells

The results published by them[7] and by Murphy, Monroe and Fitz[9] are being confirmed in many clinics and, I feel, may be accepted as essentially correct, so far as the improvement in the blood picture and the patient's condition is concerned, in pernicious anemia

If the prognosis as to life has been considered bad in pernicious anemia, uncomplicated by neurologic changes, with all previous therapeutic measures, the possibility of improvement in the presence of spinal cord changes was practically nonexistent, except in a very few cases, and then solely as a matter of chance and not as the result of medical intervention Russell, Batten and Collier[3] state that, "so far as these cases are concerned, the certain diagnosis of combined degeneration passes a short sentence upon the patient" Again, Elsner[6] says, "While the gravity of the anemia is not in direct proportion to the nervous symptoms in all cases, our experiences justify the conclusion that, once established, Lichtheim symptoms are likely to persist and that marked tabetic and cerebral symptoms, when present, are found in the most advanced stages or in those least likely to have long periods of remission" Further, Greene[10] says "One group of symptoms of this disease is quite beyond treatment, namely, those due to involvement of the cerebrospinal system"

This pessimism is likewise reflected by Murphy and Minot in presenting the favorable results obtained by them relative to the blood changes with their new diet They[7] say "The blood of patients with rather high counts of their blood cells and prominent signs of injury to the spinal cord responded more slowly perhaps and less well than others, and, as is to be expected, no striking change occurred in very marked symptoms or signs due to spinal cord degeneration", and later in the same article, "following the diet all patients showed a prompt, rapid and distinct remission of the anemia coincident with at least marked symptomatic improvement, except for the pronounced disorders due to spinal cord degeneration"

REPORT OF CASE

The following case is presented in an endeavor to show that improvement may be obtained in certain well established cases of subacute combined sclerosis complicating pernicious anemia, that have not progressed too far, with the Murphy-Minot high liver diet

S, a middle aged white man, came to the dispensary of the University Hospital, March 1, 1923, complaining of 'stomach trouble, numbness and tingling of both hands and general weakness" Questioning elicited that he had had typhoid influenza and grip, otherwise the past history was unimportant

The present illness began in December, 1922, as a cold which developed into grip This illness confined him to the house for about two weeks, at this time there also developed earache and a sensation of "fulness in the stomach' After leaving the house he continued to feel weak until in February, numbness and tingling appeared periodically in both hands, it would start at the wrists and would involve both hands in their entirety There was total loss of sensation with inability to appreciate either the presence or number of objects in his hands, the surfaces were numb The condition seemed better in the morning

From the onset the patient had had a gnawing pain in the epigastrium, unaffected by foods and accompanied by anorexia Constipation also annoyed him His maximum weight, the previous fall, was 168 pounds (76 2 Kg), but at this time it had fallen to 138 pounds (62 6 Kg), a loss of 30 pounds (13 6 Kg)

He complained of some palpitation on exercise but otherwise the cardiovascular system was essentially normal

Physical examination revealed a lemon yellow pallor, a fair state of nutrition, slight tenderness over the right mastoid and deviation of the tongue to the left with slight tremor The knee kicks were present and equal The temperature was 97 4 F and the blood pressure 122 systolic and 80 diastolic The impression given by the dispensary physician was pernicious anemia, and hospital study was advised

March 14, thirteen days later, a bed was secured, and the patient was admitted He then added to his complaint 'nervousness and griping pains when at stool", also he stated that the loss of weight began slowly in August 1922 rather than with the grippal attack in December, as did the hyperexcitability and irritability In an amplified gastro intestinal history he told of a knotty' drawing feeling in the epigastrium after meals of several months' duration, of the griping feeling before and during defecation which had been present for the past two years, of two or three attacks of soreness of the tongue and of one or two attacks of a mild diarrhea

On physical examination the observations were about the same as those made in the dispensary with the additional observation however, that the splenic edge was felt three finger breadths below the costal margin

The laboratory data were as follows The urine contained a trace of indican and urobilin The blood picture revealed red blood cells, 1 900 000, hemoglobin 44 per cent, color index 1 2, polymorphonuclear neutrophils 42 per cent small lymphocytes 55 per cent, large lymphocytes, 3 per cent, with a reduction in platelets Examination of the gastric contents following an Ewald test meal revealed an absence of free hydrochloric acid The dispensary diagnosis of pernicious anemia was confirmed and a transfusion was given

April 20, the patient was discharged as improved and, May 4 he returned to the dispensary with the report that he was feeling well, was working and showed a gain of 10 pounds (4 5 Kg) The accompanying chart shows the condition of the blood at this time, with the usual drop from the peak obtained immediately after transfusion to a fairly satisfactory level of 3,296 000 red blood cells a hemoglobin percentage of 70 per cent and a color index of more than 1 In regard to the color index this may be immediately interpreted on the chart by noting the relative positions of the lines representing the red blood cell count and the hemoglobin percentage, when the latter is below the former, the color index may be considered below unity, and when it is above, the color index may be considered as more than 1 Thus it can be seen that the patient experienced a remission, probably as a result of the transfusion

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[7] Minot G R and Murphy W P Treatment of Pernicious Anemia by a Special Diet J A M A **87** 470 476 (Aug 14) 1926

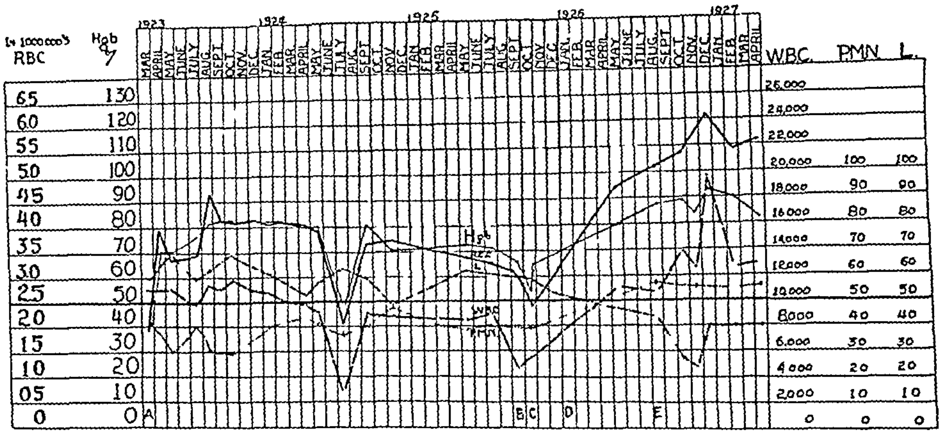
[8] Minot G R and Murphy W P Liver Diet in Pernicious Anemia and the Distinction Between Aleukocythemic Myeloid Leukemia and Pernicious Anemia M Clin N Amer **10** 1093 1102 (March) 1927

[9] Murphy, W P Monroe R T and Fitz Reginald Changes in Blood in Pernicious Anemia Treated by a Diet Rich in Liver J A M A **88** 1211 1214 (April 16) 1927

[10] Greene in Tice s Practice of Medicine **6** 816

For just a year the patient continued to hold his own without relapse, although the general trend of the blood condition and other symptoms was downward, on a treatment with arsenic and dilute hydrochloric acid In May, 1924, however, a relapse began, which reached its lowest point in July, at which time embryonic cells appeared in the blood smears with marked anisocytosis and poikilocytosis The patient complained of weakness and indigestion, but did not complain of any increase in the severity of the neurologic symptoms

The patient was not seen again until September when he returned in a fairly well established remission, which was not however, equal to the previous one, a common experience in these cases It is interesting to note in endeavoring to evaluate treatment that the most potent procedure at our command until recently, was used at the time of the first relapse and would certainly under ordinary circumstances be given credit for the remission, except that one year later in the same patient, a remission occurred quite as readily following as is shown by reference to the accompanying chart, a relapse of almost equal severity without this therapeutic measure



Record of changes in the blood in a case of pernicious anemia over a period of five years *A* transfusion at University Hospital *B* diarrhea at University Hospital *C* transfusion at Maryland General Hospital with reaction and onset of neurologic symptoms *D* neurologic symptoms marked conditions grave *E* Murphy Minot diet

The patient continued in fair condition until November 1924, with a blood condition that was fairly satisfactory, as is shown by the chart

Nothing more was seen of him until May, 1925 when he reappeared not feeling very well but not seriously ill At this time he was again on the down grade and became progressively worse until, in September, he had an attack of diarrhea as a result according to him, "of taking too much magnesium sulphate" He was admitted to the University Hospital where he rapidly improved and was discharged, September 24 fifteen days later, as improved Free hydrochloric acid was not discovered in the gastric juice In a few days, however, he again began to feel bad, being very weak, and this, together with the condition of his blood, caused us to send him to the Maryland General Hospital for a transfusion, in the absence of a bed in the University Hospital

The patient delayed entering the Maryland General Hospital until October 6, when the blood examination revealed hemoglobin, 55 per cent, red blood cells, 2 390,000 and the white blood cells low, as is shown on the chart which also shows that this was the trough of this relapse so far as the blood condition was concerned as immediate improvement was shown after the transfusion The blood smear previous to the transfusion showed anisocytosis, poikilocytosis and a moderate degree of polychromatophilia Following the transfusion, the hemoglobin rose to 73 per cent

It is thus seen that definite improvement in the blood was accomplished by the transfusion but on the patient s return to the university dispensary he complained bitterly that he had had a marked reaction from the procedure with definite increase in the tingling sensation in the legs and with a drunken gait, which made it embarrassing for him to go on the street, as every one stared at him thinking him intoxicated Examination showed hyperesthesia of the right thigh pain in the left foot, absent knee kicks, ataxia and a positive Romberg sign Owing to some oversight, the vibratory sense was not tested Our impression was that the patient was showing spinal cord changes as a result of the anemia Routine treatment for the pernicious anemia was continued

In January, the patient's condition was so bad that, in discussing with the social service worker his request for advice in regard to going South to see some relatives, I stated that he might as well do so, as it would probably be his last opportunity At this time, his condition was much worse with such signs of mental involvement as depression, inability to remember things while at work, irritability and, in addition definite diminution in visual acuity

About April, 1926, the patient, who is a very intelligent and cooperative person, brought me a clipping from a Boston paper in which it was stated that Drs Murphy and Minot had perfected a cure for pernicious anemia I told him that these cures were discovered from time to time, and that I should like to obtain further details, a request to one of the large research bureaus brought me the response that nothing could be found on this subject by the men indicated The patient asked me whether or not I thought it would harm him to eat a large amount of liver, I told him that it would not and advised him to try it, as experimental work seemed to suggest that it might be helpful He immediately did so, but to a much less degree than is advocated by the originators In August as is shown, he was put on the Murphy-Minot diet as soon as it appeared in the literature in detail

The blood was not analyzed from October, 1925 until May 1926 when a great deal of improvement had occurred, this lapse was due to the patient's dereliction in attendance, as he felt much better At the time that the blood was analyzed in May the patient was subjectively as much improved as might be surmised from the condition of the blood, being stronger and experiencing less difficulty in walking Probably, had estimations been obtained during this time the blood improvement would have been found more nearly to correspond with that generally noted at the beginning of the Murphy-Minot diet in view of the close parallelism between the diet and the subjective manifestations

Although the patient definitely improved simply by adding liver to his dietary daily, this improvement was striking following the beginning of the complete regimen in August Soon after this in October, 1926, the examination in the dispensary disclosed that the patient weighed 176 pounds (80 Kg), was looking extremely well and was working steadily Ataxia, when the eyes were open, had almost disappeared Romberg's sign remained strongly positive but the knee kicks showed some signs of returning He stated that he was able to follow the diet so far as the character of it was concerned, but that the quantity was too great The blood had improved remarkably with a color index definitely below 1, red blood cells above 5 000,000 and hemoglobin 89 per cent, for the first time the lymphocytes had dropped below the polymorphonuclear neutrophils

In December, the improvement in the blood reached its peak, so far as the red blood cells and the hemoglobin were concerned but coincident with pain in the right shoulder, accompanied by a slight degree of fever, the leukocytes rose temporarily to 19,000 The diagnosis was neuritis of infectious type, as the patient had some signs of bronchitis together with loss of strength in the affected arm This cleared up with the use of salicylates

In February, 1927, the patient came into the dispensary stating that he was feeling well and that his gait had greatly improved

In April, my note was, 'Patient much improved, working regularly, ataxia greatly improved, able to climb shelves for records in his office which, heretofore, he had relied on an office boy to obtain Knee kicks have returned almost to normal and Romberg s sign has decreased to simply a slight swaying with the eyes closed Gastric analysis reveals a minus eight hydrochloric acid finding" The condition of the blood had more nearly approached normal in every way At this point the patient was sent to the neurologic department for a complete survey, with the following observations

Examination showed that the patient was getting better The gait was not disturbed, and muscle power tone and development were good

The abdominal and cremasteric reflexes were not present Plantar stimulation gave rise to plantar flexion of the toes and retraction of the extremity Knee kicks were very active on both sides, as were also the triceps and biceps reflexes The achilles reflex was not obtained even with Jendrassek's method of reinforcement nor were the hamstring reflexes The patient complained of slight difficulty in vesical control

Coordination in the upper and lower extremities was good Romberg s sign was negative and the diadokokinetic test was normal

Vibratory stimuli were not perceived over any bony prominence of the lower extremities There was an interference with the muscle sense in the toes Tactile, pain and temperature sense everywhere were normal The patient complained of a numb, tingling sensation in both feet There were no abnormal vasomotor and trophic manifestations The cranial nerves were normal

It was thought that degenerative changes had occurred in the lateral and posterior pathways of the spinal cord secondary to toxemia These changes are among the manifestations of a primary anemia

Subsequent to the preparation of the chart in April, 1927, the patient had been observed for approximately four months When seen, August 2 Romberg s sign continued negative and the sensory disturbances had entirely disappeared from the upper extremities with definite improvement in the lower The knee kicks were less exaggerated the patient weighed 172 pounds (78 Kg), a gain of 42 pounds (19 Kg) since 1923 when he was first seen, he was cheerful and said that he felt quite well except for the numbness and tingling in the lower extremities Examination of the blood at this time showed red blood cells, 5 200 000, hemoglobin 89 per cent and total lymphocytes, 12,200

SUMMARY

A case of pernicious anemia, early associated with signs and symptoms of subacute combined sclerosis, has been observed over a period of almost five years With the conventional methods of treatment in vogue before the introduction of the Murphy-Minot diet, the progress of the patient was steadily downward, except for periods of temporary improvement The neurologic condition early in 1926 was rather far advanced, as was evidenced by numbness and tingling in both the upper and the lower extremities, inability to appreciate the number and character of objects, extreme loss of equilibrium with resultant tabetic gait, which required two canes to enable him to walk at all, and then haltingly, and complete loss of the patellar reflexes Mentally, the patient was depressed and irritable, and complained of failing memory His sight was becoming dim

Following about one year of the diet advocated by Murphy and Minot for pernicious anemia the patient became bright and alert and was able to walk briskly His equilibrium was exceedingly well improved, as was indicated by a negative Romberg sign and his ability to climb shelves for records, formerly obtained for him by some one else The patellar reflexes returned although they were hyperactive, and the sensory disturbances of the extremities cleared up entirely in the hands and arms and, while still present in the lower limbs, were definitely improved

The improvement in this patient is best appreciated by one who saw him as a depressed invalid in the early part of 1926, unable to walk without two canes and having the greatest difficulty in maintaining his balance, even when standing still, and who again saw him, just a few days ago, walking down to his work at a very brisk pace, swinging the one cane he now uses, more from choice than from necessity

It seems apparent, therefore, that the administration of a Murphy-Minot diet, advocated by the originators for pernicious anemia has been of distinct value in a case of subacute combined sclerosis The condition of the blood was also markedly improved in this case

Medical Arts Building

BACTERIAL ALLERGY (HYPERERGY) TO NONHEMOLYTIC STREPTOCOCCI

IN ITS RELATION TO RHEUMATIC FEVER *

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AND
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The subject of bacterial allergy in its relation to certain phenomena of infectious diseases has assumed increasing importance in recent years In our studies of rheumatic fever the view that such an allergy has an important bearing in the pathogenesis of the disease has become more and more prominent Several years ago one of us[1] called attention to the similarity between many of the manifestations of rheumatic fever and those of syphilis and tuberculosis The anatomic features of these last two diseases have been thoroughly established as allergic in their pathogenesis If, therefore, one had a conception of rheumatic fever as an analogous disease, it seemed only logical to determine whether the micro-organisms suspected of playing an etiologic role could be brought into relationship with any allergic state In this connection we[2] have been able to show that by suitable inoculation with nonhemolytic streptococci it is possible to induce in rabbits a hyperergic condition comparable to that obtained in animals inoculated with tubercle bacilli When the hyperergic rabbits are subsequently inoculated intracutaneously with amounts of streptococci too small to cause grossly appreciable lesions in normal animals, they react with papules from 10 to 15 mm in diameter and from 1 to 3 mm thick If their anesthetized corneas are lightly scarified and a drop of culture is instilled into the conjunctival sac, an interstitial keratitis is pro-

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* From the Hospital of the Rockefeller Institute for Medical Research

* Read in a symposium on rheumatic fever before the Philadelphia Pathological Society Dec 8 1927

[1] Swift H F Rheumatic Fever Am J M Sc **170** 631 (Nov) 1925

[2] Andrewes C H Derick C L and Swift H F The Skin Response of Rabbits to Nonhemolytic Streptococci I Description of a Secondary Reaction Occurring Locally After Intradermal Inoculation J Exper Med **44** 35 (Jan) 1926 Derick C L and Swift H F Hyperergic Tissue Response to Nonhemolytic Streptococci Proc Soc. Exper Biol & Med **25** 222 1927

duced which varies in intensity and persists from three to fifteen days according to the degree of hypersensitiveness of the animal Similar inoculations in normal rabbits have not produced a comparable keratitis This hyperergic state can be maintained fairly well in animals by the production of infected agar foci One of the most interesting features of this condition is that it is not specific when considered from the standpoint of strain specificity, that is, a strain A which has certain cultural and immunologic characteristics may induce a state in an animal in which it is possible to demonstrate hypersensitiveness to strains B, C or D, which are within certain limits widely separated from the original allergizing strain These animals also show skin hypersensitiveness to filtrates, not only of the organisms with which they have been rendered hyperergic but also to those of the more distantly related strains This immediately suggested that the variability in the cultural and immunologic characteristics of various types of nonhemolytic streptococci and even of hemolytic streptococci which have been isolated from patients with rheumatic fever was of less significance than one might *a priori* think probable In 1917, Swift and Kinsella[3] showed that there was a decided heterogeneity in the strains they recovered, and since that time these observations have been confirmed repeatedly by us On more than one occasion we have been able to recover two or more immunologically different strains of nonhemolytic streptococci, either from the blood or subcutaneous nodules of patients during life, or from material obtained post mortem Birkhaug[4] has recently brought forth evidence to show that patients who are "stigmatized by rheumatic fever" show skin hypersensitiveness to filtrates of a special group of anhemolytic streptococci We have been able to confirm these observations, but in addition have found that most patients in the acute stages of the disease, and many who have apparently recovered also show a similar skin hypersensitiveness to filtrates of certain strains of *Streptococcus viridans* Zinsser and Grinnell[5] assert that in autolysates of various bacteria are set free the substances which stimulate the allergic state, and that such autolysates are the best reagents for testing hypersensitiveness We have found that the strains described by Birkhaug or similar strains die more quickly in broth cultures and autolyze more readily than do most other nonhemolytic streptococci In this fact may rest a possible explanation of the greater ease of obtaining a skin reactive substance from these inulin-fermenting, anhemolytic strains

Another interesting feature of the reacting substance is that in many instances this so-called toxin is not inactivated by boiling one hour, indeed in the majority of patients with active rheumatic fever the skin reaction with this boiled filtrate has been more marked than with control unboiled filtrate in the same dilution We have also found that the rabbits made hyperergic in the manner described show similar phenomena when tested with these filtrates in their various forms

Rabbits which are highly hyperergic to nonhemolytic streptococci show reactions, following intravenous injection of these streptococci, similar to those seen in tuberculous animals injected intravenously with tubercle bacilli or tuberculin This suggested to us the possibility of testing the reactions of patients to the intravenous injection of very small doses of killed streptococci or of their products, and we[6] have found that these reactions generally resemble those of tuberculous patients or animals following injections of small doses of tuberculin The febrile reaction usually develops slowly and reaches its maximum within ten to twenty-four hours following the injection This is in distinct contrast to the nonspecific protein shock reactions observed after intravenous injection of typhoid bacilli The reactions observed by Small[7] in patients with rheumatic fever following subcutaneous injection of vaccines prepared with *Streptococcus cardioarthritidis* closely resemble tuberculin reactions Many physicians have reported the occurrence of nonspecific protein shock reactions in rheumatic patients following the injection of a number of substances, but so far as we can determine these reactions occur after a shorter interval and run a shorter course than do the tuberculin-like reactions just mentioned We feel, therefore, that these reactions furnish additional evidence in support of the hypothesis that there is in the patient with rheumatic fever a state comparable to that of the rabbit made hyperergic to certain nonhemolytic streptococci

We have also determined that the hyperergic state in rabbits is induced most readily by the production of focal lesions, and is maintained for months by making an agar focus infected with the allergizing streptococci Intravenous inoculation,[8] on the other hand, fails to induce this hyperergic state The presence of a focus of infection, therefore is a most important factor in inciting this state Here, again, there is a striking parallelism between the condition of these rabbits and that of patients with rheumatic fever There is much clinical evidence to support the contention that focal infection has an important bearing on the evolution of this disease, but up to the present the importance of the focus was thought to rest in its role as a nidus from which the virus was disseminated throughout the body Our conception of the focus, on the other hand is of an area where the allergizing substance is produced and whence it is spread to sensitize the various tissues This conception does not deny that virus may also gain entrance to the blood stream from the focus, but stresses the allergizing effect of such a focus From this hypothesis it is easy to understand that the state of the tissues of the patient is the most characteristic feature of the disease and that the specificity of the streptococci recovered may play a relatively unimportant role

One of the causes of confusion resulting from the reports of the results of different observers has been the variety of streptococci which have been isolated from patients with rheumatic fever Each worker is naturally inclined to attribute a specific etiologic role to the strain isolated by him The hypothesis that in rheumatic fever there is a hypersensitive state, which is not strictly strain specific, but which embraces a wide range of streptococci, reconciles these divergent observations It makes understandable the possibility that the micro-organisms described by the following workers, to mention only a few, may indeed have been the exciting agents of the active disease in the patients from which they were recovered the *Streptococcus cardioarthritidis* of Small,[9] the inulin fermenting anhemolytic streptococcus of Birkhaug,[4] the strains described by Clawson,[10] the *Micrococcus rheumaticus* of Poynton and Paine,[11] and the three types found by Rosenow[12] It also explains the possible etiologic role of the strains recovered by us in the past fifteen years, despite their great cultural and immunologic variation The existence of such a hyperergic state, as suggested by the observations of Mackenzie and Hanger,[13] in persons who are not suffering from rheumatic fever, may also explain the frequent finding of pathologic evidence of the disease in subjects who have failed to show the classic symptoms of the disease during life[14] We feel, therefore, that this hypothesis has now enough support to entitle it to consideration as a theory It is interesting in reviewing Menzer's[15] work to note that he had a somewhat similar conception of the disease at a time before allergy or the allergic state was recognized He thought that the general dissemination of the streptococci occurred at the time of tonsillitis or other initial lesion which often precedes an attack of rheumatic fever, and that only at the time that the patient developed immune bodies did the general metastatic manifestations of the disease appear Weintraud[16] also considered hypersensitiveness as being of importance in the pathogenesis of the disease, but he argued from the point of view of serum disease rather than from that of bacterial allergy

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[3] Swift H F and Kinsella R A Bacteriologic Studies in Acute Rheumatic Fever Arch Int Med **19** 381 (March) 1917

[4] Birkhaug K F Rheumatic Fever Bacteriologic Studies of a Non Methemoglobin Forming Streptococcus with Special Reference to Its Soluble Toxin Production J Infect Dis **40** 549 (May) 1927

[5] Zinsser Hans and Grinnell F B The Antigen Involved in Pneumococcus Allergy J Bact **14** 301 1927

[6] Swift H F Hitchcock C H and Derick C L General Tuberculin Like Reactions in Rheumatic Fever Patients Following Intravenous Injection of Streptococcus Vaccines or Nucleoproteins Proc Soc Exper Biol & Med **25** 312 1928

[7] Small J C Personal communication to the authors and at the meeting of the Philadelphia Pathological Society Dec 8 1927

[8] Swift H F and Derick C L Immune Tissue Response Nonhemolytic Streptococci Proc Soc Exper Biol & Med **45** 224 19

While it is true that serum disease and rheumatic fever possess in common the condition arthritis, this does not necessarily indicate that the two diseases have a similar pathogenesis The points of dissimilarity between the arthritis of the two diseases are many, and may be explainable on the basis of the differences between protein hypersensitiveness and bacterial allergy Dochez and Stevens[17] have recently established in animals infected with *Streptococcus erysipelatis* the existence of two types or phases of hypersensitiveness, one to a toxin which can be neutralized in vitro, and the second to some other bacterial product which they were unable to neutralize Birkhaug[4] stated that he was able to neutralize by means of antitoxic serum the toxic filtrate he obtained, but so far we have been unable to demonstrate a comparable neutralization in patients who were suffering from active rheumatic fever There may be in patients with rheumatic fever two phases of hypersensitiveness to nonhemolytic streptococci, if so, our observations indicate that during the active stages of the disease the allergy is predominantly of the second type Whether or not these patients will pass into a condition later in which the skin allergic reactions can be prevented by specific neutralization of the toxic filtrate with an antitoxic serum in vitro is a question that can be answered only after continued observation

Sixty-Sixth Street and Avenue A

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[9] Small J C The Bacterium Causing Rheumatic Fever and a Preliminary Account of the Therapeutic Action of Its Specific Antiserum Am J M Sc **173** 101 (Jan) 1927

[10] Clawson B J Studies on the Etiology of Acute Rheumatic Fever J Infect Dis **36** 444 (May) 1925

[11] Poynton F J and Paine A *The Etiology of Rheumatic Fever* Lancet **2** *861* 1900

[12] Rosenow E C The Etiology of Acute Rheumatism Articular and Muscular J Infect Dis **14** 61 1914

[13] Mackenzie G M and Hanger F M Allergic Reactions to Streptococcus Antigens J Immunol **13** 41 (Jan) *1927*

[14] Von Glahn W C Rheumatic Disease of the Heart Arch Path & Lab Med **3** 355 (Feb) 1927

[15] Menzer A Serumbehandlung bei acutem und chronischem Gelenkrheumatismus Ztschr f klin Med **47** *109 1902*

[16] Weintraud W Ueber die Pathogenese des akuten Gelenkrheumatismus Berl klin Wchnschr **50** *1381 1913*

[17] Dochez A R and Stevens F A Studies on the Biology of Streptococcus VII Allergic Reactions with Strains from Erysipelas J Exper Med **46** 487 (Sept) *1927*

A UROHEPATIC SYNDROME

CHOLEMIC MANIFESTATIONS FOLLOWING INSTRUMENTATION OF PATIENTS HAVING OBSTRUCTIVE LESIONS IN THE URINARY TRACT WITH A COEXISTING HEPATIC CIRRHOSIS

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Among untoward manifestations following instrumentation in cases presenting obstructive lesions in the urinary tract, variously known as urinary fever or urethral fever, those presenting the clinical picture of acute cholemia were not found to be described in the survey of the literature on the subject These cases are reported here in order to point out the dangerous possibilities that may result from such manipulation in patients suffering from hepatic disease, presumably a cirrhosis

Any venture to explain the mechanism that will produce this syndrome would be largely speculative in the light of our present knowledge It would seem, however, that the shock, often entirely unavoidable, incidental to urethral or ureteral instrumentation, may be the chief factor in precipitating cholemic manifestations Jaundice has been known to occur following a shock due to other causes in patients with preexisting hepatic disease Douste-Blazy[1] calls attention to the important role the kidneys play in the etiology and prognosis of grave jaundice, and states that the latter can appear either in patients with a slight hepatic lesion but a profound kidney disease, or with an extremely grave hepatic lesion superimposed on a superficial renal disorder In the cases presented here, renal embarrassment undoubtedly existed because of the obstructive lesion below

REPORT OF CASES[2]

Case 1—*Urethral stricture with coexisting hepatic cirrhosis in a case of recent jaundice Acute cholemia immediately following urethral instrumentation Death*

A man, aged 47 a railroad employee, married, was referred to me, Oct 1, 1923, by Dr Louis J Placek He was a moderate smoker, but drank excessively on Sundays

He had had gonorrhea twenty three years before, followed by a stricture, which was not treated He had had typhoid in 1898, and the left leg had been amputated twelve years before as a result of an accident

About three weeks before he was seen by me, the patient was suddenly unable to void the urine and had a severe attack of vomiting, following heavy drinking Eventually he began to pass small quantities of bloody urine A day or two later he developed a severe chill followed by a slight fever Jaundice was noticed, and the patient was acutely ill in bed for two weeks Within the last two weeks the jaundice began to subside and he felt well enough to be up and about He continued, however, to have great difficulty on voiding

The patient was well developed and nourished The left leg had been amputated below the joint The skin and sclera were slightly icteric On abdominal palpation, the free edge of the liver was found to extend three fingerbreadths below the free costal margin The kidneys were not palpable The voided urine was cloudy, with a specific gravity of 1 020, acid in reaction and containing a slight trace of albumin and no sugar On microscopic examination it was found to be loaded with pus cells The roentgen-ray examination of the urinary tract was negative

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[1] Douste Blazy Stanislas De la forme renale de l ictere grave *Theses Faculte de medecine de Paris 1906 1907*

[2] Since this article was submitted for publication Dr Roy B Handline has related to me a case of anuria and deep jaundice occurring in a patient whom he saw in November 1927 immediately following the passage of a sound for dilation of a strictured urethra The patient was severely ill but finally recovered

A filiform stricture was found at 3 cm. within the urethra, which was dilated up to 10 F. As a result of this manipulation, the patient bled somewhat profusely from the urethra and while on the table had a slight syncope. He was able, however, to get dressed, and went home apparently in good condition.

A few hours later, while at home, the patient developed a chill which was followed by fever (104 F.). He became somewhat drowsy. On the following day it was noted that the jaundice, which had previously practically disappeared, had returned and had begun to deepen rapidly. He became very restless and was delirious at times. On the following day the jaundice became very pronounced; he went into a comatose state, and died.

Case 2.—*Urethral stricture with coexisting hepatic cirrhosis. Acute cholemia immediately following the sounding of the urethra. Death. Necropsy.*

A man, aged 36, married, a dealer in real estate, consulted me, Sept. 22, 1926, because of a slight burning in the urethra and a slight discharge following exposure ten days before.

His father and mother had died of apoplexy.

The patient had had gonorrheal urethritis twenty years before, followed by acute epididymitis. The latter was probably responsible for the patient's sterility. Twenty years before he had had a chancre (?) for which he received a number of antisyphilitic injections. He had had diabetes four years before, and became sugar free after a few months of treatment. Since the gonococcal infection, he had experienced difficulty in passing the urine and there had been some dribbling.

Examination of the urethral meatus did not reveal any reddening. A slight seropurulent discharge was noted at the meatus. The voided urine was cloudy and contained a number of shreds. The smear showed a few intracellular gram-negative diplococci. The right epididymis was slightly thickened. It was with great difficulty that the anterior urethra could be injected with an antiseptic solution, as most of it would squirt out of the meatus. Although the presence of the stricture was not determined instrumentally because of the comparative acuteness of the attack, there was no doubt that the patient had an old urethral stricture.

The patient was treated for five or six weeks with anterior injections until the urine cleared up and gonococci were no longer seen in the smears. Because of some urgent business, and at the patient's request, he was temporarily discharged and instructed to report for dilation at the first opportunity.

The patient was seen again, April 22, 1927. The urine was clear save for a few shreds. A 14 French woven bougie encountered an obstruction at the midportion of the anterior urethra which was overcome with some difficulty. The urethra was dilated up to 16 F., and the patient left the office apparently in perfect condition.

On arriving home two hours later, the patient became indisposed, felt somewhat drowsy and complained of pain in the legs. He did not have a chill and the temperature was normal. On the following day he became distinctly jaundiced, developed ecchymotic spots in the lower eyelids and began to hiccup. He became extremely restless and somewhat irrational. The jaundice was growing deeper and on the fourth day he lapsed into a semicomatose state and became violently delirious. The temperature continued to remain practically normal and the pulse was slow. He was admitted to the New York Hospital, service of Dr. William R. Williams, in a stuporous condition and was kept isolated because of the violent delirium.

The physical examination at the New York Hospital revealed, essentially, stupor, deep jaundice, blood clots in both nostrils, subconjunctival hemorrhages on both sides, the lips covered by dried blood clots, foul breath and very dry tongue. There was diffuse tenderness on palpation over the entire abdomen. The liver edge was felt three fingerbreadths below the costal margin. There was a sanguineous discharge from the urethra.

Dr. Oswald S. Lowsley was called into consultation and did not find any evidence of periurethral or perirectal abscess.

The ophthalmoscopic examination by Dr. W. J. P. Dye was negative.

The blood pressure was 130 systolic and 60 diastolic. The urine was bloody and contained a heavy trace of albumin but no sugar; microscopic examination showed innumerable erythrocytes. The hemoglobin was 80 per cent. The white blood cell count was reported to be 48,250 per cubic millimeter, an unusually high count with practically a normal differential: 65 per cent polymorphonuclear leukocytes and 35 per cent lymphocytes. The Wassermann reaction of the blood was negative in alcoholic and cholesterin antigens. Chemical examination of the blood revealed urea nitrogen, 49 mg.; sugar, 148 mg. per hundred cubic centimeters; carbon dioxide capacity, 32 per cent by volume. The icteric index was 194. Blood cultures were negative after twenty-four and 120 hours.

The Gritzert test was negative. A lumbar puncture yielded a clear pale yellow spinal fluid which contained 15 leukocytes to a cubic millimeter, gave a positive Fehling reaction, and had a normal globulin content, and a negative colloidal gold curve. The Wassermann reaction of the spinal fluid was negative in both antigens. The stools gave a positive guaiac reaction and contained a faint trace of bile.

While the patient was in the hospital, the temperature ranged from 97.8 to 99.8 F., and the pulse rate was from 88 to 110. Shortly before death, the temperature rose to 101 F. The patient died, April 29, three days after being admitted to the hospital.

Necropsy was performed by Dr. James W. Denton, and the summary of the anatomic diagnosis was as follows: (1) diffuse nodular cirrhosis of liver (hobnailed cirrhosis), (2) acute degeneration of the renal epithelium, (3) gastro-intestinal hemorrhages, (4) urethral stricture, and (5) icterus.

The cause of death was placed as diffuse nodular cirrhosis of the liver. The microscopic sections of the liver showed slender strands of newly formed connective tissue between groups of lobules. The liver cells were fatty in places and in others were pale with ill defined edges and almost a total disappearance of marginal fusing. Microscopic sections from both kidneys showed tubules containing albuminous material and occasional casts. No very obvious chronic changes were present.

Case 3.—*Mild jaundice following cystoscopic manipulation for a stone in the ureter in a patient having hepatic cirrhosis. Passage of the calculus. Recovery.*

A salesman, aged 72, married, referred to me by Dr. L. Levine, July 26, 1927, gave a negative family and personal history, and was apparently a man of good habits.

The present illness began in February, 1927. The patient was suddenly seized with an attack of agonizing pain in the left costovertebral angle radiating downward into the groin and accompanied by burning on urination and frequency. The pain lasted about a week with varying intensity. July 22, he was seized with a similar attack of pain which was accompanied this time by vomiting. The pain lasted until the morning of examination and was relieved by an injection of morphine sulphate.

The patient appeared to be unusually well preserved for his age. There was a slight cataract in the left eye. Tenderness was elicited over the left kidney region. The edge of the liver was palpable three fingerbreadths below the costal margin. A good sized catheter was introduced into the bladder without obstruction and no residual urine was found. The voided urine contained a heavy trace of albumin and on microscopic examination innumerable red blood cells were found.

The cystoscopic investigation revealed the presence of an obstruction at the juxtavesical portion of the left ureter. This was overcome with a number 6 Charriere catheter, and the urine obtained from the left kidney came out in a rapid flow indicating retention. On the right side, the catheter had a clear way up to the kidney. The phenolsulphonphthalein output from both kidneys was very good.

The roentgenogram with an opaque catheter in the ureters showed the presence of a typical stone shadow in the lower end of the left ureter.

August 4, the intramural portion of the ureter below the stone was dilated. Considerable difficulty was encountered in an attempt to pass by the obstruction with a catheter.

August 14, the patient reported for another cystoscopic treatment. He stated that, although he no longer had renal pain, he had nevertheless had a great deal of gastric discomfort and had felt nauseated since the last treatment. He was not confined to bed however. On examination, the skin and sclera were found to be distinctly icteric. The pulse was slow and the temperature normal. Because of previous experience, I thought that it would be advisable to dispense with instrumentation until the jaundice subsided.

Two days later the patient passed a whitish gray, oval stone measuring 7 by 11 mm with blackish incrustations at several places. He was seen again three weeks later. The jaundice was entirely gone, and the gastric symptoms had disappeared. Blood was taken for a Wassermann test which was reported negative.

SUMMARY AND CONCLUSIONS

In two cases of coexisting urethral stricture and hepatic cirrhosis, fatal cholemic manifestations followed immediately after urethral sounding. Autopsy in one case revealed the presence of urethral stricture, hobnail cirrhosis of the liver and acute degeneration of the renal epithelium.

A mild jaundice followed intra-ureteral manipulation for a stone in a patient presumably having hepatic cirrhosis.

These observations point to the dangerous possibilities which may result from instrumentation of patients suffering from hepatic cirrhosis. Such instrumentation should be undertaken with greater care and reserve, and more judgment should be exercised as to the advisability of tampering with the urinary tract. The cases are of clinical significance in that they emphasize the importance of a thorough general examination with especial reference to the liver in cases presenting obstructive lesions in the lower urinary tract.

307 East Seventeenth Street.

Clinical Notes, Suggestions and New Instruments

TWO CASES OF TULAREMIA

W. L. Brosius, M.D., Detroit

Case 1.—*Tularemia with agglutination after eighteen years.*—In October, 1909 two or three days after killing and dressing wild rabbits, W. L. B., aged 17 noted a hivelike swelling on the second joint of the left fourth finger. Because of a rapid increase in size, the swelling was incised deeply and cauterized with phenol (carbolic acid). Within six hours the patient had severe chills, the temperature rose to 105 F., red streaks appeared on the arm, and the left axillary glands enlarged rapidly to the size of a hen's egg. The chills and fever continued for about four days with extreme prostration, delirium and marked loss of weight. The axillary glands remained hard, and the epitrochlear glands did not enlarge. The patient did not recall having seen any rash. The hand and forearm were moderately swollen, but soft. The original lesion became a shallow ulcer with sharp margins and a granulating base with only a slight seropurulent discharge. Convalescence and healing of the ulcer required from six to eight weeks.

Blood serum drawn Feb. 17, 1927, and Jan. 23, 1928 was reported by Dr. Edward Francis of the Hygienic Laboratory, United States Public Health Service, as agglutinating *Bacterium tularense* in dilutions up to 1: 160, but not in higher dilutions. The Wassermann reaction was negative. No illness to which the agglutination could be attributed has occurred since the one here described.

This case, a personal experience, occurring in Gallatin, Daviess County, Missouri, is believed to be the earliest human case to be confirmed by agglutination or other positive means and also the first reported from this location. No similar cases in the region are recalled, although in certain seasons it was noted that many wild rabbits were found dead.

Case 2.—*Tularemia diagnosed by agglutination six years later.*—In November, 1921, D. B., aged 35, spent two days hunting near Tippecanoe, Ohio and killed and dressed wild rabbits. Five days later the patient felt very weak and shaky and was found to have a temperature of 102 F. The next day a sore appeared at the nail margin of the right fourth finger. The third day red streaks appeared on the forearm, the temperature was 104 F. with extreme prostration and delirium. The right epitrochlear and axillary glands enlarged rapidly, the epitrochlear glands were incised and drained pus. The fifth day the finger nail was removed leaving an ulceration which lasted seven weeks. A blood count showed leukocytes, 10,500, polymorphonuclears, 80 per cent., lymphocytes, 8 per cent., large mononuclears, 2 per cent., transitionals, 9.5 per cent., eosinophils, 0.5 per cent. Fever continued two weeks, the patient lost 15 pounds (7 Kg.), was in bed eight weeks, and was convalescent for three months. Blood serum drawn, Jan. 13, 1928, was reported by Dr. Francis as agglutinating *Bacterium tularense* in dilutions up to 1: 180, but not in higher dilutions. The Wassermann reaction was negative.

Dr. Francis says, "I know of no other disease in which an agglutination test will set the diagnosis right in such no uncertain terms after so many years."

2033 Park Avenue.

AN IMPROVED BLOOD CULTURE TECHNIC

Edward F. Lane, New Britain, Conn.

The use of anticoagulants in blood culture work is by no means new. Ammonium and sodium oxalate and sodium citrate and chloride have all had their proponents, and some if not all of these substances are still widely used in either the solid or the dissolved form.

Manheims and McGrath[1] have shown that sodium citrate solutions up to a certain percentage are not inhibitory to the growth of organisms, and Colebrook and Storer[2] have shown that powdered sodium citrate is inhibitory.

I have used the technic given here for the past five years. During the first two years of that time, a large number of cases were controlled either by using half of the 10 cc. of blood drawn for the citrate method or by using a larger syringe and collecting twice the amount of blood, the second half in each case being used for the standard technic. In these controlled cases the two cultures usually showed identical results, the exceptions being those cases in which a growth was picked up by the citrate method when none was obtained from the control. The results in these exceptions were always checked and were always in accord with those of the clinician.

A 3 per cent. solution of sodium citrate in distilled water is prepared and tubed in 1 cc. amounts. These tubes are plugged in the usual way, autoclaved, tested for sterility, and stored until required.

When a blood culture is to be taken, a test tube of the citrate solution is taken to the patient's bed from the stock, and 10 cc. of blood is drawn with a syringe. As soon as the needle is withdrawn from the vein it is removed from the syringe and the contents of the syringe are expelled into the citrate without allowing the syringe to touch the tube. The tube is returned to the laboratory, where, after the entire top half of the tube has been thoroughly flamed without heating the blood in the lower half of the tube, the tube is opened and the blood transferred to a flask containing 100 cc. of 2 per cent. dextrose nutrient broth. This is incubated for seventy-two hours, several loopfuls of the culture being smeared on a blood agar plate every twenty-four hours. These plates are in turn each incubated for seventy-two hours and examined for growth every twenty-four hours, as is also the broth at the time of each transfer.

54 Griswold Street.

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[1] Manheims, P. J., and McGrath, I. S.: J. Lab. & Clin. Med. **12**: 6 (March) 1927.

[2] Colebrook, L., and Storer, E. J.: Brit. J. Exper. Path. **5**: 47 (April) 1924.

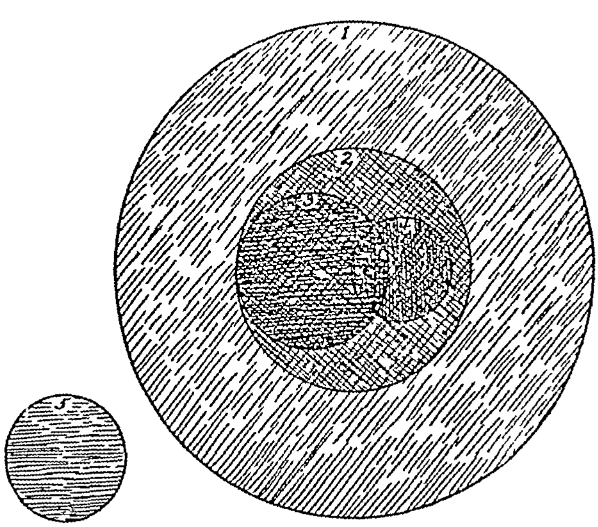
HOSPITAL SERVICE IN THE UNITED STATES

SEVENTH ANNUAL PRESENTATION OF HOSPITAL DATA BY THE COUNCIL ON MEDICAL EDUCATION AND HOSPITALS OF THE AMERICAN MEDICAL ASSOCIATION

The fund of classified hospital information presented in the following pages is the result of a complete census of the entire hospital field

In the pages immediately following is the story of 6,807 hospitals and sanatoriums built and maintained by different groups, and of the more than 80,000 physicians besides the vast army of other specialized personnel required to man the thousands of posts for the alleviation of pain and the promotion of health The list of hospitals in the United States begins on page 923 and constitutes the American Medical Association's first Hospital Register

The information contained in this issue was supplied by the hospitals themselves during the closing weeks of 1927 Much of it has been checked by the Association's regular correspondents and others in position to supply the facts A total of more than 6 700 hospitals sent reports on blanks sent them by the Council on Medical Education and Hospitals—a practically unanimous response



EXPLANATION OF DIAGRAM

1 The large circle (1) embraces all the 6 807 hospitals admitted to the American Medical Association Hospital Register

2 Circle 2 embraces the 1 543 hospitals that are approved by the American College of Surgeons unconditionally

3 Circle 3 represents the 609 hospitals that are approved for intern training by the Council on Medical Education and Hospitals of the American Medical Association

4 Circle 4 represents the 292 hospitals that are approved for residencies in specialties by the Council on Medical Education and Hospitals of the American Medical Association

5 The small circle (5) at the left represents 462 institutions that are not admitted to the A M A Hospital Register

To the hospitals themselves therefore, belongs much of the credit for so complete a census of hospitals accomplished in so short a time

The accompanying diagram of circles has been devised to give the reader a clear idea of the classification of the hospital field today

REGISTERED HOSPITALS

The large circle (1) embraces all of the 6,807 hospitals of all types and sizes in the United States that have been admitted to the American Medical Association's Hospital Register Contrasted with the large circle in the drawing is the smaller circle (5) to the left, which is drawn to scale and which represents 462 institutions, 11,379 beds, which for sufficient reasons, as explained elsewhere, were not admitted to the Hospital Register The figures given do not include bassinets which are occupied solely by new-born infants who are hardly to be classed as patients

The large outer circle embraces 6,807 registered hospitals including institutions of all types and conducted by all the various agencies 4,322 general hospitals, 563 insane asylums and other nervous and mental institutions, 508 tuberculosis institutions besides 1,414 other hospitals accounted for in the diagram and the complete Hospital Register The hospitals also are of all sizes, from the largest nervous and mental institutions down to hospitals of eight or ten beds

There are 530 infirmaries or hospital departments of prisons, homes or other institutions All of the hospitals in this large circle are considered as safe places for such service as they purport to render

HOSPITALS APPROVED BY THE COLLEGE OF SURGEONS

For the sake of comparison, smaller circles have been drawn to scale, within the larger circle, to show the proportion of hospitals (by number) that have met the requirements of standardizing agencies and that appear on their approved lists The second circle shows the proportion of hospitals approved by the American College of Surgeons as meeting their minimum standard The hospitals included in this circle are indicated in the Hospital Register by the triangular symbol (▲)

HOSPITALS APPROVED FOR INTERN TRAINING

Circle 3 represents all hospitals that have been approved for the training of interns by the Council on Medical Education and Hospitals These 609 hospitals are those that have been found, after various reports and inspections, to provide the training of interns as required in the Council's "Essentials in a Hospital Approved for Interns" (see page 920) It is these hospitals which seriously undertake to give a fifth year of instruction in medicine that in quality and content is comparable with the clinical instruction obtained by the student in his last two years in medical college In these hospitals the majority of graduates of medical colleges will have obtained their intern training Fully 95 per cent of all medical graduates now obtain internships whether state boards or medical colleges require it or not For convenience in designating hospitals approved for intern training in the Hospital Register and other lists published by the American Medical Association, the five-pointed star (★) is used

HOSPITALS APPROVED FOR TRAINING IN SPECIALTIES

The 292 hospitals that are approved for residencies in specialties by the Council on Medical Education and Hospitals are represented by circle 4 To be approved for giving residencies in specialties, the hospital agrees to appoint to those residencies only medical graduates who have already completed a general internship, or the fifth year in medicine The overlapping of this circle on circle 3 is intentional, and shows the extent to which hospitals that provide an approved training for interns also provide higher internships or residencies in specialties The plus (+) symbol is used in the Hospital Register on the accompanying pages, as well as elsewhere in the publications of the Association, to designate hospitals that are approved for residencies in specialties or advanced internships

HOSPITALS ACCORDING TO TYPES OF SERVICE RENDERED

The figures covering the hospital field and here condensed in tabular form possess many studies of interest to those interested in hospitals Because of their relative completeness and because some of them have not been available heretofore, these figures will be analyzed with interest by hospital executives, prospective builders, and others

TABLE 1—*Summary of Hospital Data*

State	Estimated Population July 1 1927	General			Nervous and Mental			Tuberculosis			Maternity			Industrial			Convalescent and Rest		
		Hospitals	Beds	Average Patients	Hospitals	Beds	Average Patients	Hospitals	Beds	Average Patients	Hospitals	Beds	Average Patients	Hospitals	Beds	Average Patients	Hospitals	Beds	Average Patients
Alabama	2 549 000	80	4 295	2 502	3	3 440	3 216	4	189	136	2	66	52	4	361	225	2	42	28
Arizona	459 000	38	1 433	768	1	725	670	24	1 711	1 282	1	16	8	12	293	143	2	24	14
Arkansas	1 923 000	59	2 805	1 521	2	3 398	3 235	1	365	330	1	8	4	4	342	134			
California	4 433 000	262	24 112	15 778	32	17 776	16 764	40	3 593	2 976	19	293	160	23	907	654	10	325	168
Colorado	1 074 000	72	5 929	3 616	8	2 900	2 846	19	2,193	1 957	2	45	14	5	152	70	4	324	213
Connecticut	1 636 000	42	4 918	3 322	14	6 806	6 543	8	1 105	867	1	12	6				6	108	67
Delaware	243 000	10	590	317	2	805	700	2	105	63							1	20	20
District of Columbia	540 000	18	4 633	3 061	2	4 123	4 076	2	235	176	2	138	96				1	22	15
Florida	1 363 000	65	3 798	1 939	4	3 188	2 929				1	8	4	2	108	88	1	30	
Georgia	3 171 000	85	4 771	2 720	5	5 776	5 512	5	543	311	3	48	26	2	137	81	1	11	6
Idaho	531 000	46	1 507	845	3	975	947	1	110	67	2	32	6						
Illinois	7 396 000	234	21 080	16 131	27	24 877	22 969	25	3 195	2 433	9	272	211	7	438	217	7	353	290
Indiana	3 150 000	99	6 732	3 961	14	9 517	8 542	7	1 006	796	1	64		4	175	84	9	1 215	836
Iowa	2 425 000	138	6 854	3 967	14	9 236	8 246	7	782	594	5	126	58	1	40	24	2	56	3
Kansas	1 828 000	107	5 013	2 928	10	4 588	4 430	3	205	158	1	9	4	4	275	174			
Kentucky	2 538,000	78	4 121	2,441	10	5 913	5 436	6	1 002	796	2	20	10	7	170	69	1	8	2
Louisiana	1 934 000	42	5 155	3 430	5	4 249	3 860	5	632	317				4	221	135	1	20	2
Maine	793 000	49	2 158	1 356	6	2 798	2 660	5	471	408	5	48	27				1	30	15
Maryland	1 597 000	42	5 242	3 729	17	6 698	6 124	8	1 002	935							4	91	79
Massachusetts	4 242 000	165	17 489	12 662	37	22 759	22 212	30	3 745	3 121	15	452	263	2	38	12	10	203	145
Michigan	4 490 000	145	13 307	9 526	17	14 888	14 129	18	2 083	1 607	2	24	35	16	358	216	2	300	177
Minnesota	2 686 000	161	10 175	6 583	16	10 414	10 183	10	2,220	1 915	5	191	148	2	43	14	7	391	213
Mississippi	1 790 618	58	3 025	1 584	3	3 237	3 088	2	524	325				2	135	89			
Missouri	3 510 000	98	8,892	5 935	19	11 340	10 499	7	1 296	1 158	6	329	210	8	637	241	2	35	22
Montana	714 000	53	2 620	1 479	1	1 550	1 421	1	150	147	1	8	6	4	163	91			
Nebraska	1 396 000	91	4 222	2 399	5	4 426	4 270	1	130	94	3	44	19						
Nevada	77 407	15	420	251	1	300	225	1	58	34				3	80	54			
New Hampshire	455 000	33	1 742	1 017	2	1 996	1 993	2	185	170	2	30	11	1	16	3	1	10	7
New Jersey	3 749 000	85	9 932	6 790	19	12 458	11 380	15	2 168	1 669	4	127	87	1	25	16	12	791	561
New Mexico	392 000	27	1 071	624	1	500	500	14	1 417	930				7	284	94	1	75	40
New York	11 423 000	393	41 483	29 062	62	56 779	53 589	65	8 350	7 340	21	1 304	900	4	68	82	39	2 406	1 716
North Carolina	2 897 000	97	4 685	2 749	8	5 538	4 879	27	2,503	1 786	1	5	2	3	100	49	1	30	8
North Dakota	641 192	43	1 903	1 202	3	2 060	1 910	1	160	95	2	25	11						
Ohio	6 710 000	172	17 601	13 156	26	18 774	17 458	15	2 037	1 594	16	539	366	2	31	8	4	91	65
Oklahoma	2 384 000	92	3 858	2 346	5	4 570	4 538	7	542	408	1	14	8						
Oregon	890 000	58	3 159	2 117	7	4 090	3 758	4	311	290	7	157	108	2	50	20	2	13	7
Pennsylvania	9 730 000	228	30 577	21 894	42	28 467	26 939	23	4 036	3 462	18	982	687	5	177	90	11	365	298
Rhode Island	704 000	16	2 825	1 877	3	2 385	2 190	3	500	431	1	112	60				3	41	31
South Carolina	1 845 000	44	2 331	1 295	2	2 835	2 713	7	399	250							1	35	23
South Dakota	696 000	55	2 488	1 445	3	2 122	1 847	1	240	182	1	10	5	1	25	15			
Tennessee	2 485 000	66	5 172	3 271	10	4 061	3 659	8	2 184	1 329	1	10	5	2	20	3	1	15	8
Texas	5 397 000	206	10 228	6 269	13	7 424	6 767	22	4 928	4 388	5	50	22	8	584	266	1	12	4
Utah	522 000	28	1 263	871	2	836	789				1	10	2	2	47	21			
Vermont	352 428	22	997	614	4	1 585	1 638	3	142	124				1	35	16			
Virginia	2 546 000	75	5 698	3 462	10	7 079	6 806	7	968	777	1	6	3	5	170	80	2	55	40
Washington	1 562 000	86	6 051	3 690	9	5 866	5 529	9	1 060	832	5	94	41	4	85	49	3	54	28
West Virginia	1 696 000	59	3 561	2 040	4	3 808	3 239	5	569	415				2	104	69	1	500	386
Wisconsin	2 918 000	131	9 495	6 232	47	12,308	10 843	19	1 431	1 289	2	19	10				2	32	26
Wyoming	241 000	24	948	407	3	1 001	971	1	30	20				2	45	35			
Totals (1927)	118 627 645	4 322	345 364	228 084	563	373 364	349 667	508	63 170	50 784	178	5 747	3 695	168	7 039	3 712	159	8 143	5 589
(1923)											262			70			137		

It is expected that increasing numbers of hospitals will improve their standards, so that future reports will show these inner circles gradually expanding The tentative demarcation between hospitals on the basis of standards, such as is shown in the accompanying diagram and the list, has heretofore been a difficult task The hospital field is now being more closely scrutinized, however, standards are being raised, efficiency demanded, and means being devised to show, as nearly as may be, which are fit and which are unfit institutions for the care of the sick, as well as those which are equipped for the education of physicians and nurses

The most vital part of every hospital is the high standard of professional and moral qualifications of its staff of physicians and nurses Lessen or destroy this primary or vital element, and the hospital to an equal extent ceases to serve humanity

GENERAL HOSPITALS

In the tabulation, in which hospitals are grouped according to types of service, general hospitals far exceed any other group in number, there being 4,322 general hospitals, with a capacity of 345,364 beds and an average of 228,084 patients The term "general hospital" as used here refers to those that have medical, surgical and other special services The majority of general hospitals, however, do not cater to contagious cases or to acute tuberculous or nervous and mental cases Information is often sought as to the number of beds available in the country for maternity service or for other special services The answer is not known, because most general hospitals do not have their beds definitely divided between the various services Nervous and mental cases are fairly well separated from general hospitals, and likewise tuberculosis cases are largely in hospitals provided for that purpose Aside from these two types of cases, without doubt, much more work is done in the specialties, and more patients are cared for in general hospitals than in hospitals limited to special classes of patients For example, about ten times more maternity work, apparently is done in the maternity departments of general hospitals than in all special maternity hospitals Just how many beds of a certain type each community requires depends on the community

According to Types of Service Rendered

Isolation			Children's			Eye Ear Nose and Throat			Orthopedic			Skin and Cancer			Hospital Depts of Institutions			All Other Hospitals			Total				
Hospitals	Beds	Average Patients	Hospitals	Beds	Average Patients	Hospitals	Beds	Average Patients	Hospitals	Beds	Average Patients	Hospitals	Beds	Average Patients	Number	Beds	Average Patients	Hospitals	Beds	Average Patients	Hospitals	Beds	Average Patients	Bassinets	Grand Total Capacity
			2	56	29										10	255	152				107	8 704	6,340	408	9 112
						1	35	27							4	59	34				83	4 296	2,946	122	4 418
			1	50	20										6	270	201	1	15	12	75	7,253	5 457	188	7 441
3	152	17	4	420	324	2	18	9	3	139	142				19	1 777	1 431	4	242	201	421	49,844	38 634	2 638	52 482
3	120	45	2	131	109										3	232	87				124	12,417	8 957	522	12 939
3	235	94				1	14	9	1	60	60				14	417	215	1	30	25	91	13 705	11 298	839	14 544
															1	5	3				16	1 525	1 103	95	1 620
1	41	12	1	165	101	4	134	56							4	104	62	1	100	96	36	9 685	7 754	358	10 043
			1	25	10				1	18					4	130	72				79	7 311	5 042	461	7,772
1	30	10				1	10		1	64	60				5	204	172	1	45	42	110	11 099	8 940	998	12 097
1	12	1													4	78	39				57	2 714	1 905	192	2,906
5	493	191	3	340	223	4	270	129	4	475	397	1	15	5	38	2,282	1 583	3	298	271	367	57 388	45 080	3 140	60 528
4	42	7	1	150	105										15	663	395	1	9	4	155	19 573	14 730	897	20 470
4	71	15				1	10	4							10	192	95	1	66	60	183	17 433	13 066	959	18,392
															10	343	182	1	20	10	156	10 453	7,886	504	10 957
									1	50	45				12	383	158	1	25	24	117	11 695	8 981	480	12 175
1	120	3				1	66	23	1	60	60				5	115	60	2	560	365	67	11 208	8,255	297	11 505
1	20	2							1	90	53				2	351	266				70	5 966	4 793	369	6 335
1	110	75				2	90	29	2	182	130	1	30	20	10	167	88	1	74	74	88	13 746	11 283	407	14 153
7	594	231	6	446	362	2	236	155	6	761	567	4	253	117	17	520	102	[illegible]	279	250	306	47 785	40 202	2 935	50 720
6	225	65	1	250	186	2	126	87				7	7	2	18	721	389	1	8	3	229	32,308	26,422	1 676	33 984
6	148	24				2	198	141	2	312	265				11	234	79	2	195	183	233	24 551	19 778	1 305	25 856
															6	141	98				70	7 062	5 175	232	7 294
2	214	90	3	398	318				1	106	104	1	40	32	11	654	308	1	24	18	159	23 865	18 935	1 046	24 911
1	23	6													5	115	47				66	4 629	3 197	300	4 929
3	84	21							1	115	113	1	30	15	9	288	161	1	20	12	115	9,359	7,104	494	9 853
															2	56	24				22	914	588	42	956
1	55	12	1	17	10										5	158	39	1	18	12	49	4 227	3 270	332	4 559
8	984	444	3	450	244	4	115	77	5	261	179				16	438	235	5	261	176	177	28 010	21 858	1 509	29 519
			2	45	24										1	15	8				53	3 407	2 220	78	3 485
8	2 238	1 047	6	670	498	11	720	396	11	1 577	1 329	5	518	402	56	2,490	1 390	9	1 508	1 357	620	120 051	99 958	5 946	125 997
			3	106	80	4	73	29	1	85	79				13	374	70				158	13 499	9 731	621	14 120
2	58	8				1	12	7							1	25	12				53	4 243	3 245	244	4 487
3	190	13	3	355	182	11	140	59	2	140	94	1	6	2	53	2 585	1 531	5	526	534	293	42,955	35 062	1 917	44 872
									1	20	15				5	131	58				111	9 135	7 373	348	9 483
1	70	24	1	63	50	1	35	18	1	50	57				8	136	61	1	35	34	93	8 169	6 540	530	8 699
7	1 656	470	5	578	520	7	258	153	8	618	432	1	40	16	49	1 525	663	11	588	520	415	69 867	55 944	3 584	73 451
1	190	121													8	80	63	1	45	44	31	6 178	4 820	332	6 510
						1	15	7	1	50					10	268	109				66	5 933	4 397	222	6 155
															3	44	26				64	4 929	3 520	242	5 171
2	115	60				5	122	34	2	80	68				8	263	85	1	24	18	106	12,066	8,541	341	12 407
1	170	5	3	80	52	5	83	33	2	85	63				13	433	191				279	24 027	18 060	937	24 964
			1	50	55										4	56	21				38	2 262	1 739	167	2 429
									1	17	17				4	77	28				35	2,853	2 437	149	3 002
1	60	5	1	14	7	1	20	4	1	30	25				13	1 111	734	1	60	60	118	15 271	12,003	530	15 801
2	102	16	1	9	7				1	150	100				8	428	316	1	24	15	129	13 923	10 623	889	14 812
			2	72	57	3	42	16							3	120	100				79	8,776	6 322	424	9 200
[illegible]	382	119	1	150	134										12	435	198	4	141	108	225	24 393	18 959	1 211	25 604
1	10	5													2	92	11				33	2,056	1 449	104	2 160
98	8 895	3,264	58	5 050	3 487	77	2 832	1 502	62	5 9[illegible]5	4 4[illegible]6	16	919	611	530	21 930	12 453	68	5 240	4 528	6 807	853 318	671 832	41 961	895 279
111			81			58			37			32			767						6 830	755 722	553 185	34 511*	790 233

1925

NERVOUS AND MENTAL HOSPITALS

The 563 institutions for nervous and mental cases have a capacity of 373,364 beds, and the inmates or patients number 349,667, not including paroles Every state has one or more such institutions and some states have separate institutions for the chronic insane, the criminal insane, the feebleminded, backward and mentally defective, epileptic, etc Arizona Montana, Nevada and New Mexico have one institution each for the nervous and mental Several states have two each, while New York requires 62, Wisconsin 47 Pennsylvania 42, California 32, and Illinois 27 These figures, of course, include hospitals under private as well as public control They do not include nervous and mental departments which are sometimes found in general hospitals

HOSPITALS FOR TUBERCULOSIS

Hospitals for tuberculosis number 508 with a capacity of 63,170 and having 50,784 patients, not including the tuberculosis departments of general hospitals The distribution of tuberculosis hospitals is interesting States long regarded as meccas for tuberculous patients, although still having facilities out of all proportion to their population apparently are not gaining in numbers of patients Colorado, for example, shows only 2,493 beds and 1,957 patients in its tuberculosis institutions, Arizona, 1 711 beds and 1,282 patients, New Mexico, 1,417 beds and 930 patients, Texas, 4,928 beds and 4,388 patients These hospitals, however, are mostly private institutions accepting mainly pay patients In comparison with these states, Connecticut has in its tuberculosis institutions 1,105 beds and 867 patients, Illinois, 3 195 beds and 2,433 patients, Michigan, 2,083 beds and 1,607 patients, Massachusetts, 3,745 beds and 3,121 patients, New York, 8,350 beds and 7,340 patients That the tuberculosis columns do not indicate a distribution according to climate is not surprising, since all states naturally care for their own indigent tuberculous patients

MATERNITY HOSPITALS

The statistics show only 178 hospitals, limited to maternity cases, with only 5,747 beds and 3,695 patients

Bassinets are not included in the figures, but a separate count shows a total of 41,961 bassinets in all general and special hospitals of the country, about nine tenths of which are in general hospitals This indicates that only about one tenth of all maternity work is done in maternity hospitals Note, meanwhile, that maternity hospitals decreased in the last five years from 262 to 178

INDUSTRIAL HOSPITALS

A marked contrast with maternity hospitals appears in the figures for industrial hospitals—or those used mainly for industrial patients—which increased in number during the past five years from 70 to 168 The cause for this increase is not now apparent and furnishes a subject for further inquiry There are no industrial hospitals in some important industrial states and only three in New York, five in Pennsylvania and seven in Illinois, while there are twenty-three in California and sixteen in Massachusetts It seems that the industrial cases in the strongest industrial states are cared for almost entirely in general hospitals which do not belong to the industries themselves

HOSPITALS FOR CONVALESCENCE AND REST

The figures showing facilities for convalescence and rest are necessarily less dependable than in other lines because such institutions shade off on one side into health resorts and on the other side into places for mild nervous and mental cases It is believed, however, that institutions reported under this heading in table 1 represent a fair inventory, showing 159 hospitals and homes for convalescence and rest with a capacity of 8,143 beds and having 5,589 patients The number of such places has increased from 137 to 159 during the past five years

ISOLATION

Isolation hospitals represent a type of service that is increasing in effectiveness but dwindling in volume

There is a happy contrast between the pest houses of former years and the present well cared for isolation hospital The number of such hospitals has decreased from 111 five years ago to 98 at present The 8,895 beds now available report an average of 3,264 patients last year Seventeen states did not report a single isolation institution

CHILDREN'S HOSPITALS

Children's hospitals apparently have always made a strong appeal to the public, nevertheless, the entire number of children's hospitals is only fifty-eight as compared with eighty-one reported five years ago The fifty-eight now in existence have a capacity of 5,050

TABLE 2—*Summary of Hospital Data Accord*

	Government Owned Hospitals																	
	Federal			State			County			City			City-County			Total Government Owned		
	Hospitals	Beds	Average Patients	Hospitals	Beds	Average Patients	Hospitals	Beds	Average Patients	Hospitals	Beds	Average Patients	Hospitals	Beds	Average Patients	Hospitals	Beds	Average Patients
Alabama	4	753	636	9	3 610	3 313	6	320	244	4	300	180	1	60	40	24	5 043	4 413
Arizona	20	1 516	1 069	3	749	684	9	317	217							32	2 582	1 970
Arkansas	3	963	877	6	3,248	3 037	2	325	284	3	188	96				14	4 724	4 294
California	20	6 577	4 389	17	16 660	15,589	57	8 577	6 960	9	329	89	3	1 753	1 293	106	33 896	28 325
Colorado	4	2 397	1 317	10	3 319	3 081	6	107	101	1	10	4	4	625	376	25	6 548	4 879
Connecticut				15	6 794	6 450	1	43	38	7	649	432				23	7 486	6 920
Delaware	1	28	9	4	910	763	1	5	8							6	943	779
District of Columbia	9	7 219	6 064	3	247	169				1	345	257				13	7 811	6 490
Florida	4	515	271	5	3 290	3 000	4	254	180	8	758	523	2	97	63	23	4 914	4 037
Georgia	8	1 296	1 038	6	5 414	5 000	8	128	62	6	1 006	674	4	435	282	27	8 279	7 056
Idaho	4	377	217	7	1 053	986	2	79	54	2	42	9	1	50	32	16	1 601	1 298
Illinois	10	3 246	2 096	21	24 363	22 480	27	5 162	3,955	22	2,325	1 438	3	153	107	83	35 249	30 076
Indiana	3	1 196	1 104	22	9 092	7 941	33	1 980	1 232	4	623	236	3	30	6	65	12 921	10 509
Iowa	3	707	590	18	9 507	8,302	13	824	595	8	175	72	1	20	10	43	11 233	9 569
Kansas	6	950	503	15	4 916	4 667	3	181	139	7	156	83	1	40	35	32	6 196	5 427
Kentucky	4	552	395	11	6 009	5 465	4	235	151	6	667	439	4	456	390	29	7 919	6 840
Louisiana	4	1 531	1 075	8	5 837	4 989				1	100	80	1	120	3	14	7 588	6 147
Maine	4	441	339	7	3 101	2 970	1	20	11	2	90	71				14	3 652	3 391
Maryland	9	1 737	1 196	17	5 210	4 690	5	303	218	6	1,189	1 027				37	8 469	7 131
Massachusetts	12	2,420	1 682	29	25 810	24 631	6	657	531	36	4 750	3 276	2	39	30	85	33 676	30 150
Michigan	5	760	663	22	14 225	13 245	22	4 687	3 809	32	2 965	2,102	2	41	31	83	22 678	19 910
Minnesota	9	1 467	666	18	11 015	10 564	16	1 527	1 409	15	1 018	727	4	1 204	733	62	16 231	14 099
Mississippi	1	425	209	11	4 301	3 813	1	132	85	1	35	15	1	12	4	15	4 905	4 126
Missouri	6	862	616	12	7 600	6 975	5	224	134	14	5 881	5 332				37	14 567	13 057
Montana	7	471	276	6	1 799	1 611	6	247	157				1	23	6	20	2 496	2,050
Nebraska	5	161	62	13	4 893	4 614	2	182	137	6	244	119				26	5 480	4 932
Nevada	4	118	71	2	308	227	9	312	187							15	738	485
New Hampshire	1	240	46	5	2 139	2,101	4	160	124	6	216	100				16	2 755	2,371
New Jersey	4	122	43	16	8 230	7 781	20	6 494	5 324	12	2,384	1 756	1	20	7	53	17 250	14 911
New Mexico	12	1 109	760	3	543	519	2	32	16							17	1 684	1 295
New York	29	3 969	2 841	40	53 093	50 256	50	4 007	3 360	50	17,325	13 145	8	239	198	163	78 633	69 800
North Carolina	3	985	729	10	6 043	5 125	7	426	335	1	225	68	5	205	135	26	7 944	6 392
North Dakota	4	92	53	4	2 145	1 951	4	145	83	2	58	8				14	2,420	2 095
Ohio	7	1 793	1 314	23	21 555	19 982	23	2 106	1 608	26	3 128	2 311				79	28 582	25 215
Oklahoma	11	870	596	13	5 270	5 078	1	50	25	7	242	128				32	6 432	5 827
Oregon	4	478	316	9	4 115	3 857	3	246	212	3	104	49				19	4 913	4 434
Pennsylvania	5	1 326	974	32	19 504	18 662	20	4 843	4 408	17	12,591	9 509	4	198	104	78	38 462	33 637
Rhode Island	2	533	308	7	3 340	3 054				1	190	124				10	4 063	3 486
South Carolina	2	206	88	8	3 180	2,887	5	392	230	3	156	80	3	82	35	21	4 016	3 320
South Dakota	10	870	612	6	2 314	1 963	1	15	6							17	3 199	2 581
Tennessee	4	1 772	951	10	3 607	3 228	6	1 409	1 197	4	722	510	2	425	396	26	7 935	6 282
Texas	11	1 759	1 231	17	10 819	10 003	11	404	223	8	523	348	13	1 216	818	60	14 721	12 623
Utah	2	41	18	4	866	797	5	240	162	1	20	15				12	1 167	992
Vermont	1	62	15	6	1,235	1 188	2	55	48							9	1 352	1 251
Virginia	9	2 057	1 379	17	8 031	7 408				6	517	416	1	102	56	33	10 707	9 259
Washington	13	1 606	1 116	11	5 799	5 365	8	774	638	3	489	325				35	8 668	7 444
West Virginia				11	4 608	3 820	5	174	120	2	77	27				18	4 859	3 967
Wisconsin	4	1 233	806	15	4 339	3 829	54	9 726	8 458	13	515	190				86	15 817	13 283
Wyoming	3	651	451	5	702	627	5	291	168							13	1 644	1 246
Totals (1927)	301	60 444	42 187	592	354 786	328 737	480	58 907	47 704	360	63 327	46 389	70	7 705	5 190	1 809	545 169	470 157
(1923)	220	53 869	34 937	601	302 208	261 840	465	46 571	32 785	416	64 599	42 140	35	4 701	3 052	1 736	471 948	374 754

beds with an average of 3,487 patients. The number of children cared for in general and other hospitals is not available, but certainly would far exceed these figures. Some institutions that started as children's hospitals have gradually changed to general hospitals. The present tendency toward specialization is stronger in the direction of separating the specialties on a clinical basis rather than on a basis of age or sex.

EYE, EAR, NOSE AND THROAT HOSPITALS

The hospitals representing this specialty have increased from fifty-eight five years ago to seventy-seven at the present time, they have a capacity of 2,832 beds and an average of 1,502 patients. New York and Ohio each has eleven, and Pennsylvania seven hospitals for eye, ear, nose and throat patients, while twenty-five states report no such hospitals.

ORTHOPEDIC HOSPITALS

Next to the industrial section the orthopedic hospitals represent the largest growth during the past five years, the number having increased from thirty-seven to sixty-two. At present they have a capacity of 5 595 beds and an average of 4,456 patients. The increase is due to the development of special methods and facilities for orthopedic cases but not required for others

SKIN AND CANCER HOSPITALS

The decrease of skin and cancer hospitals from thirty-two in the past five years to sixteen at the present time, with a capacity of 949 beds and an average of 611 patients, is directly opposite to the increasing interest shown in cancer, which would presage an increase rather than a decrease. Because of the terror cancer has for the average person and the uncertainty of diagnosis and cure, the field has been inviting for both experimentation and commercialization. Quite a few of the institutions that claim to be specializing on cancer have necessarily been eliminated from the Register. Those accounted for in the skin and cancer section of table 1 are considered, after careful inquiry, as reliable institutions.

HOSPITAL DEPARTMENTS OF INSTITUTIONS

A large number of institutions mainly for custodial care, such as orphanages and homes for the aged, provide hospital departments for the care of their own inmates in times of illness. With the rapid development of general hospital facilities in practically every community, however, these institutions are finding it more convenient to transfer their sick inmates to outside hospitals, and this tendency is reflected by the shrinkage from 767 such hospital departments five

ing to Agencies Owning or in Control

Nongovernment Hospitals																						
Church			Fraternal			Industrial			Individual or Partnership			Independent			Total Nongovernment			Total				
Hospitals	Beds	Average Patients	Hospitals	Beds	Average Patients	Hospitals	Beds	Average Patients	Hospitals	Beds	Average Patients	Hospitals	Beds	Average Patients	Hospitals	Beds	Average Patients	Hospitals	Beds	Average Patients	Bassinets	Grand Total Capacity
13	794	490	1	25	10	6	427	245	85	1 174	582	27	1 241	600	83	3 661	1 927	107	8 704	6 340	408	9 112
12	719	456				12	293	143	23	532	291	4	170	83	51	1 714	976	83	4 296	2,946	122	4 418
9	866	429	5	200	150	4	342	134	28	451	182	15	607	268	61	2,529	1 163	75	7 253	5 457	188	7 441
37	4 340	2,735	7	689	484	21	916	606	151	3 369	2 042	99	6 634	4 442	315	15 918	10 309	421	49 844	38 634	2 638	52 482
26	2,459	1 631	1	250	235	5	357	213	32	680	386	35	2 123	1 613	99	5 869	4 075	124	12 417	8 957	522	12 939
7	1 159	801							15	440	322	46	4 620	3,165	68	6 219	4 288	91	13 705	11 208	839	14 544
1	65	40							2	52	25	7	465	203	10	582	328	16	1 525	1 103	145	1 670
5	667	463							6	96	55	12	1 111	746	23	1 874	1 264	36	9 685	7 754	358	10 043
5	507	212	2	52	16	2	168	88	25	502	196	22	1 168	493	56	2,397	1 005	79	7 311	5 042	461	7 772
8	660	352	1	61	60	2	137	81	44	1 008	550	31	1 461	811	83	3 420	1 884	110	11 699	8 940	398	12 097
12	581	341							20	350	171	9	182	95	41	1 113	607	57	2 714	1 905	192	2 906
95	10 334	7 214	8	371	250	6	353	190	63	1 452	843	109	9 629	6 507	281	22 139	15 004	367	57 388	45 080	3,140	60 528
30	3 381	2 203	2	140	122	3	163	76	24	751	371	31	2,217	1 439	90	6 652	4 211	155	19 573	14 730	897	20 470
47	4 072	2,416	2	66	9	1	40	24	66	1 034	473	24	989	575	140	6 200	3 497	183	17 433	13 066	939	18 372
38	2 381	1 456	2	85	58	4	275	174	82	515	273	28	974	498	104	4 230	2 459	136	10 453	7 886	504	10 957
22	1 997	1 278	4	87	32	8	270	190	28	609	295	26	819	478	88	3 776	2 141	117	11 695	8 951	480	12 175
13	1 528	954	2	130	90	4	221	135	17	605	351	17	1 036	578	63	3 520	2,108	67	11 208	8 255	297	11 505
5	386	263							22	401	223	29	1 527	916	56	2,314	1 402	70	5 966	4 793	369	6 335
13	2 014	1 749							11	383	276	27	2,850	2 127	51	5 277	4 152	88	13 746	11 283	407	14 153
18	2 627	1 534	1	50	35	2	39	12	55	900	572	145	11 094	7 899	221	14 109	10 052	366	47 785	40 202	2 935	50 720
33	3 496	2,374	2	60	47	15	359	210	49	954	541	47	4 822	3 340	146	9 630	6 512	279	32 308	26 422	1 676	33 984
46	3 950	2,877	1	62	60	1	13	6	77	1 329	660	46	2 966	2 070	171	8 320	5 679	233	24 551	19 778	1 305	25 856
9	384	176				2	135	80	25	743	332	19	895	401	55	2 157	989	70	7 062	5 175	232	7 294
44	5 203	3 557	4	345	243	8	637	241	40	1 132	615	26	1 981	1 222	122	9 298	5 878	159	23 865	18 935	1 046	24 911
23	1 514	850				4	163	91	11	158	79	8	251	127	46	2 089	1 147	66	4 629	3 197	300	4 929
18	2 152	1 212	1	40	20				59	1 180	552	11	527	388	89	3 879	2,172	115	9 359	7 104	494	9 853
1	50	28				3	80	64	2	31	16	1	15	6	7	176	103	22	914	588	42	9 6
5	330	228				1	16	3	3	22	9	24	1 104	659	33	1 472	899	49	4 227	3 270	332	4 559
20	2 820	1 901	2	113	70	1	25	16	21	576	341	80	7 226	4 615	124	10 760	6 947	177	28 010	21 858	1 509	29 519
11	886	513				6	256	83	4	59	30	15	522	299	36	1 723	925	53	3 407	2 220	78	3 485
80	11 354	8 199	7	559	422	3	54	26	92	3 090	2,142	209	26 351	19 569	457	41 418	30 358	620	120 051	99 958	5 946	125 997
16	917	571	3	109	26	8	100	49	53	1 723	1 067	65	2 706	1 626	152	5 555	3 339	158	13 499	9 731	621	14 120
21	1 548	1 016							11	141	71	7	114	63	39	1 803	1 150	53	4 243	3 215	244	4 487
54	6 550	4 652	4	336	123	2	31	8	57	1 060	527	97	6 350	4 537	214	14 373	9 847	293	42 955	35 162	1 917	44 872
8	564	440	3	90	47				51	1 388	673	17	661	388	79	2 703	1 546	111	9 135	7 373	318	9 453
18	1 700	1 199	1	50	53	2	50	20	28	609	297	25	817	537	74	3 226	2 106	93	8 169	6 540	530	8 699
77	7 338	5 450	6	293	149	4	108	41	68	1 396	901	212	22 270	15 746	337	31 405	22 257	415	69 867	55 944	3 584	73 451
2	275	174							4	66	41	15	1 824	1,119	21	2 115	1 334	31	6 178	4 820	332	6 510
6	299	176	1	50	New				14	438	230	24	1 130	671	45	1 917	1 077	66	5 933	4 397	222	6 155
13	902	523				1	25	15	20	376	186	13	427	235	47	1 730	959	64	4 929	3 620	242	5 171
7	1 212	674	1	41	15	2	20	3	40	955	508	30	1 903	1 059	80	4 131	2 259	166	12 066	8,541	341	12 407
37	3 415	2 075	8	431	302	8	581	269	114	2 693	1 481	63	2 180	1 310	219	9 306	5 437	279	24 027	18 060	937	24 964
6	777	598				2	47	21	13	156	58	5	115	70	26	1 095	747	38	2,262	1 739	167	2 429
3	192	116				1	35	16	4	76	44	18	1 198	1 010	26	1 501	1 186	35	2 855	2,437	147	3 002
6	643	403	2	87	55	4	150	68	23	801	541	50	2 783	1 677	85	4 564	2 744	118	15 271	12 003	530	15 801
21	2 768	1 781				2	32	19	40	753	408	23	1 682	971	94	5 235	3 179	129	13 923	10 623	889	14 812
9	761	368				2	104	69	28	1 049	577	22	2 003	1 341	61	3 917	2 355	79	8 776	6 322	424	9 200
60	5 566	3 688	1	20	10	2	24	13	29	457	297	47	2 509	1 668	139	8 576	5 676	225	24 393	18 959	1 211	25 604
2	29	12				2	45	35	12	171	73	4	107	83	20	412	203	33	2 056	1 449	104	2 160
1 060	108 582	72,813	85	4 935	3 193	161	7 032	3 694	1 682	39 118	21 769	2,010	148 482	100 196	4 998	308 149	201 675	6 807	853 318	671 832	41 961	895 279
893	77 911	49 040	97	5 043	3 187	146	5 730	3 079	1 762	45 719	27 399	2,196	149 341	95 674	5 094	283 774	178 379	6 830	755 722	553 133	34 511*	790 233

1925

years ago to 530 at the present time The 530 contain 21,930 beds and have an average of 12,453 patients Under this head have been included school infirmaries and the hospital departments of county almshouses, prisons and reformatories

OTHER HOSPITALS

In addition to the general and special hospitals described in the foregoing paragraphs, there are sixty-eight hospitals of miscellaneous types having a total of 5,240 beds and 4,528 patients Included in this section are such special institutions as those for trachoma, metabolic, cardiac and venereal diseases, and incurables

HOSPITALS ACCORDING TO OWNERSHIP OR CONTROL

GOVERNMENT OWNED HOSPITALS

Under the head of "Government Owned Hospitals" come all hospitals that are owned and controlled by any branch of government, whether federal, state or local, including the hospitals of the United States Army, the Navy, the Public Health Service, the Veterans' Bureau and the Indian Service, as well as hospitals owned and controlled by states, counties, cities and jointly by cities and counties Federal hospitals have been established mainly to care for sick or injured employees and beneficiaries or for quarantine purposes State governments have assumed responsibility for the army of indigent insane and tuberculosis patients States, because of their interests in research and education, also maintain various types of teaching hospitals, and general hospitals for the care of workers in certain industries and for the care of the indigent County hospitals are not limited to any particular clinical class of patients but have been built and maintained primarily for all indigent cases of whatever type The same is true of city hospitals Some government owned institutions admit pay and part pay patients, particularly those not adequately provided for by private agencies The uniting of a city and a county in the providing of hospitalization is, of course, purely a matter of convenience and economy

TABLE 3—*Government Owned Hospitals*

	Number of Hospitals		Number of Beds		Average Number of Patients	
	1923	1927	1923	1927	1923	1927
Federal	220	301	53 869	60 444	34 937	42 137
State	601	592	302 208	354 785	261 840	328 737
County	465	480	46 571	58 907	32 785	47 704
City	415	366	61 599	63 327	42,140	46 389
City and County	35	70	4 701	7 705	3 052	5 190
Total	1 736	1 809	471,948	545 169	374 754	470 157

That there is an increase in the amount of work done by the government from year to year was to be expected That increase is due in part to the increasing tendency for the government to assume functions heretofore belonging to volunteer agencies, but in a greater degree to the increasing number of those particular types of cases and patients whose care has been made to devolve on the various respective governmental agencies For example, the World War required more federal hospitals, while the natural increase in population and in the insanity rate required a corresponding increase in state hospital facilities An increase in indigence, unemployment or epidemics would be reflected mainly in the county and city hospitals

Table 3 shows that there are 1,809 government controlled hospitals with a total capacity of 545,169 beds and an average of 470,157 patients More than half of this staggering total comes from the 592 state hospitals with their capacity of 354,786 beds and an average daily census of 328,737 patients or inmates The federal government has 301 hospitals with a capacity of 60,444 and daily average of 42,137 patients The share taken by county governments in the care of the sick in this country is attested by the presence of 480 county hospitals with their 58,907 beds, of which an average of 47,704 are occupied all the time City hospitals number 366, having 63,327 beds and an average of 46,389 patients There are also seventy hospitals controlled jointly by city and county governments which have 7,705 beds and an average of 5,190 patients Some idea of the increase in the government hospitals can be had by reference to table 3 The total number of government controlled hospitals increased from 1,736 to 1,809, or a total of seventy-three The increase in the number of patients is still more striking, there being 470,157 patients shown by this census as against 374,754 five years ago, an increase of 95,403

Glancing through the figures covering the past five years, one might be surprised to note that the state hospitals have decreased in number from 601 to 592, and the city hospitals from 415 to 366, while the county hospitals have increased from 465 to 480, the city and county hospitals from 35 to 70, and the federal hospitals from 220 to 301 Probably the most astounding increase is in the number of patients in the state hospitals, which increased from 261,840 patients five years ago to 328,737 patients at the present time

EDUCATIONAL FUNCTIONS OF GOVERNMENT HOSPITALS

The past two decades have seen a tremendous increase in medical teaching in government hospitals, including federal, state and county institutions In addition to the fact that all hospitals are potentially, and many of them actually, educational institutions, a number of states have deliberately entered the field of general hospitals by building large plants, usually in connection with state universities, to serve the double purpose of caring for the sick and injured from all over the state and to afford teaching material for the medical department of the state university The same has been done by cities and by counties Some hospitals of each of the governmental agencies are affiliated with medical colleges and others are used for special medical and surgical clinics of various types as well as for the teaching of interns and resident physicians Federal hospitals to the number of twenty have been approved for intern training by the Council on Medical Education and Hospitals, including five army, seven navy seven marine hospitals, and the Freedman's Hospital, Washington, D C, under the Department of the Interior To enable them to give a general rotating internship, the services lacking in these hospitals, such as obstetrics and pediatrics, are supplied by affiliation with other approved institutions Certain state institutions have been used for the training of interns so far as they have been able to furnish the variety of services required for general internship and to meet the other requirements of the Council The large state hospitals for the insane also are gradually evolving into teaching institutions and a number of them are becoming known for the opportunities offered for advanced instruction in the field of neurology and psychiatry, and forty-three state institutions have been placed on the Council's list of hospitals approved for residencies in neuropsychiatry—that is, approved for courses for physicians who have already had an internship in a general hospital.

NONGOVERNMENT HOSPITALS

In response to the growing demand for hospital facilities for the care of their sick and injured, the people of the United States have provided those facilities both liberally and effectively but not uniformly. In the past, especially, many hospitals have been built by, and oftentimes for, certain groups rather than by and for the whole community. They have been built and maintained by federal, state, county or city governments as a matter of public charity, by churches and fraternal orders, mainly, but not altogether, for those who believe or who affiliate; by industries, usually for employees; by individual physicians, sometimes as an adjunct to their personal practice; by nurses and other laymen as a means of livelihood, and by independent local hospital associations, also sometimes restricted.

Fortunately, reliable figures are now available by which the growth of hospitals under each of the various groups can be checked. By reference to table 2 it will be seen that the total nongovernmental institutions in the United States number 4,998 with an average capacity of 308,149 beds and having 201,675 patients. This amounts to exactly 65.4 per cent of occupancy. The comparatively low percentage of occupancy, or number of beds occupied in the nongovernmental as contrasted with the governmental hospitals, is, of course, accounted for by the fact that the government owned institutions are largely for chronic and custodial cases, while, on the other hand the nongovernment hospitals are devoted to the care of the acute sick and injured. Note that ninety-six fewer nongovernmental hospitals are now accounted for in the United States than there were five years ago. The decrease in this item, as in others, is due in part to the consolidation of two or more institutions into one and also to the fact that certain hospitals have been found unqualified for registration and are not included in the statistics of this table. Naturally, too, the majority of these unqualified institutions are found in the nongovernment field, and the majority of them are small. It is worthy of note that, despite the decrease in the number of nongovernmental institutions, the number of beds has increased from 283,774 in 1923 to 308,149 in 1927. Also the number of patients has increased from 178,379 to 201,675.

CHURCH HOSPITALS

Religious denominations have always been noted for their hospital work, some of them having begun it hundreds of years ago, and in a general way, churches have continued increasingly in their hospital work until now the churches are to be credited with 1,060 hospitals, as compared with 893 five years ago. The capacity also has increased from 77,941 to 108,582 beds, and the number of patients from 49,046 to 72,813. Nearly all of the church hospitals are devoted to the care of the acute sick and injured and most of them are open for the care of sick and injured of the community regardless of church affiliation; likewise they receive a due proportion of support from nonchurch sources.

FRATERNAL HOSPITALS

Fraternal hospitals number eighty-five, as compared with ninety-seven five years ago, and their capacity has decreased from 5,043 beds to 4,935 beds, but the patients have increased from 3,187 to 3,193, an increase of six patients. The history of the development of fraternal hospitals is interesting. At present the fraternal orders, like churches, are opening their hospitals to a certain extent to those outside the fraternity. There is a tendency also for certain fraternities to devote their efforts to special types of patients. Notable in this respect is the work of the Shriners, who are to be credited with ten hospitals for crippled children and five mobile units connected with hospitals.

INDUSTRIALLY OWNED HOSPITALS

In the field of industrially owned hospitals there has been a very healthy increase during the past five years from 146 to 161 hospitals and a corresponding increase in the number of beds and the number of patients, so that at present the industries control 7,032 beds having an average of 3,694 patients. Obviously, the low degree of occupancy is due to the nature of the problem of hospitalization in industry, particularly to the number of emergency cases and the uncertainty with which beds will be occupied. These figures relate to those hospitals which are owned outright by industrial concerns, although some of them serve others as well as their employees.

INDIVIDUAL AND PARTNERSHIP

In the individual, or proprietary, hospitals is found a decided shrinkage within the past five years. This group shows 1,682 as compared with 1,762 five years ago. There has also been a decided decrease in the number of beds from 45,719 five years ago to 39,118 at the present time. The decrease is still further marked in the number of patients, which was 27,393 five years ago as compared with only 21,779 at the present time. The very striking decrease in the number, capacity and patronage of proprietary hospitals is due, in part, to the tendency on the part of physicians to discontinue their private hospitals when some other agent, particularly a city or a county, builds a hospital. The shrinkage in this group is also due in part to the comparatively large number of proprietary hospitals that were found to be unqualified for retention in the Hospital Register, and, consequently, are omitted from these statistics.

INDEPENDENT ORGANIZATIONS

Under the head of independent organizations comes a large number of very useful and active institutions. They are owned and controlled by independent organizations, usually local, and usually organized especially for the purpose of building and maintaining a hospital in and for the community. Unfortunately, some of these hospitals, because of their popular or community nature, have fallen a prey to certain faddish ideas, and some have fallen under the control of unscrupulous and unprincipled individuals, so that a few of this group have had to be omitted from the lists and statistics published herein. This accounts for at least a part of the decrease in number of independent hospital associations from 2,196 five years ago to 2,010 at the present time. The capacity is nearly the same, being 148,482 now as compared with 149,341 five years ago, while the total number of patients cared for in these hospitals has increased from 95,674 to 100,196 at the present time.

The majority of the independent hospitals are incorporated not for profit although there are still a number of "stock" organizations operating hospitals.

PHYSICAL THERAPY DEPARTMENTS IN HOSPITALS

It seems almost superfluous to ask hospitals to report whether they have roentgen-ray departments and laboratories, because the use of such diagnostic and therapeutic facilities is now so well established that they should be present in or available to all hospitals But the status of physical therapy, other than the roentgen-ray department of hospitals, is not so well fixed This year, for the first time, the questionnaire sent out to all hospitals and returned by them bore the question, "Do you have a physical therapy department?" This question was answered in the affirmative by 2,091 out of a total of 6,807 hospitals

In asking the question, no qualification was specified as to what constituted a department of physical therapy It is safe to assume, therefore, that the 2,091 hospitals have more or less room and equipment set aside for certain forms of physical therapy Those hospitals have a total of 354,019 patients

Table 4 gives the analysis of the 2,091 hospitals that report physical therapy departments, showing for each state how many hospitals have such departments, and the number of patients in those hospitals The table shows that the physical therapy departments are pretty evenly distributed geographically They seem, however, to be most numerous in industrial states, for we count in New York 180 physical therapy departments, Pennsylvania 134, California 133, Illinois 128, Ohio 102 It has been suggested that the relative popularity of physical therapy in California is due not entirely to the presence of industry but also in part to the climatic conditions that attract chronic and other types of health seekers, for whom physical therapy is of special value

Among the sixty-two orthopedic institutions in the United States, forty-two report that they have physical therapy departments Eighty of the 168 industrial hospitals, 233 of the 563 nervous and mental hospitals, 150 of the 508 tuberculosis hospitals and 1,506, or more than one third of the 4,322 general hospitals in the United States, report physical therapy departments

TABLE 4—*Physical Therapy Departments in Hospitals*

State	General Hospitals		Tuberculosis Hospitals		Nervous and Mental Hospitals		*Orthopedic Hospitals*		*Industrial Hospitals*		*All Other Hospitals*		Hotal Hospitals Having Physical Therapy Departments	
	Hospitals	Average Patients	Hospitals	Average Patients	Hospitals	Average Patients	Hospitals	Average Patients	Hospitals	Average Patients	Hospitals	Average Patients		
Alabama	28	1 374	2	111					2	213			32	1 608
Arizona	5	81	3	737					8	106			16	924
Arkansas	20	672			1	635			1	45			22	1,352
California	94	10 031	11	956	14	8 595	2	1,304	9	573	3	37	133	21 496
Colorado	18	1 064	7	1 291	3	178			2	45			30	2,578
Connecticut	13	1 988	1	126	6	2 504	1	60			1	32	22	4 710
Delaware	3	151	2	63	1	592							6	806
Dist of Col	9	11 167			2	4 076					2	5	13	15 248
Florida	22	1 298			3	2 599			1	85			26	3 982
Georgia	22	1 021			3	705	1	60	1	40	1	6	28	1 832
Idaho	17	444			1	350							18	794
Illinois	101	11 338	14	8 468	6	765	1	48	3	197	3	9	128	20 825
Indiana	32	2 509	3	482	8	4 391			4	84	7	222	54	7 688
Iowa	59	2,205	1	79	7	6 952							67	9,236
Kansas	34	1 182	2	533	5	3 608			3	149			44	5 102
Kentucky	24	1 104	2	665	4	3 474	1	45	2	29			33	5 317
Louisiana	19	1 509	1	224	1	2 362	1	60	1	20	1	275	24	4 450
Maine	14	831	2	150	4	1 966	1	59					21	3 006
Maryland	11	957	1	440	8	5 142	1	35			1	20	22	6 594
Massachusetts	46	7 737	7	1 127	18	12 897	1	43			2	45	74	21 849
Michigan	53	5 591	11	1 003	7	6 092			6	135	5	248	82	13 069
Minnesota	54	3 124	8	465	2	2 029	2	265	3	19	3	269	72	6 171
Mississippi	18	762			1	2 138			1	50			20	2 950
Missouri	35	3 148	3	515	7	2 709	1	104	2	168	2	151	50	6 795
Montana.	13	444	1	147					3	87			17	678
Nebraska	34	1 294			2	2 220	1	113			1	15	38	3 642
Nevada					1	225			2	40			3	265
New Hampshire	7	382	2	170	1	1 566					2	16	12	2 134
New Jersey	35	4 109	5	910	9	9 247	3	116			10	589	62	14 971
New Mexico	3	212	2	357					2	33			7	602
New York	109	18 097	13	2 341	37	37 812	7	1 120	4	32	10	808	180	60,240
North Carolina	36	982	3	914	4	1 620	1	79	1	32	2	14	47	3 641
North Dakota	18	687			1	1 342							19	2 029
Ohio	69	7 481	7	872	15	10 104	1	84	1	6	9	180	102	18 727
Oklahamo	29	1 132	1	44	1	17	1	15					32	1 208
Oregon	22	1 319			1	1 845	1	53	1	8	1	34	26	3,259
Pennsylvania	92	12,355	7	798	20	17 144	7	364	2	25	6	3 421	134	34 108
Rhode Island	6	767	1	323	1	149					1	124	9	1 363
South Carolina	12	610	1	35	2	2 738	1	New			1	3	17	3 386
South Dakota	24	979			1	425			1	15			26	1 419
Tennessee	24	1 177	4	998	3	886	2	68			1	8	34	3 137
Texas	73	2 825	4	488	3	2 191	2	63	6	274	1	12	89	5 853
Utah	9	444			1	784			1	1			11	1 229
Vermont	7	267	1	40	2	518							10	825
Virginia	13	1 605	2	227	5	4 240	1	25	1	12	1	7	23	6 116
Washington	37	2 507	5	608	4	3 235	1	100	4	52			51	6 502
West Virginia	18	710	1	300	1	1 000			1	54	1	386	22	2 450
Wisconsin	58	4 788	8	817	5	1 531					2	52	73	7 188
Wyoming	7	74	1	20	1	421			1	30			10	545
Total Phys Ther Depts	1 506	136 535	150	27 484	233	176 139	42	4 283	80	26 000	80	6 978	2 091	354 019
Total hospitals of each type	4 322		508		563		62		168				6 807	

INSTITUTIONS REFUSED ADMISSION TO THE HOSPITAL REGISTER

A list of hospitals in the United States has been published in each edition of the American Medical Directory since its beginning in 1906 This list included all institutions which were considered as safe places for the care of sick or injured people The names of certain other institutions were not included, because sufficient evidence showed that they carried on illegal practices or were otherwise unethical

The need for a register containing the names of all recognized hospitals has induced the Council on Medical Education and Hospitals to assume the responsibility for the publication of such a register Although all previous lists published have eliminated those known to be undeserving, it has not heretofore been referred to as a "Hospital Register"—the designation which is being applied to the list published in this issue of The Journal In the preparation of the present list, therefore, the Council has not only endeavored to make it as complete as possible but also has exercised considerable care in selecting those that are worthy of admission to it With the extensive information that has accumulated in the hospital files of the Council, through its biographic data regarding all physicians in the United States, and through a wide correspondence with competent persons in communities throughout the United States, the Council has been enabled quite accurately to estimate the standing of individual hospitals of the country This information, therefore shows with fair accuracy what hospitals should or should not be included in the hospital register

Table 5—*Institutions Refused Registration*

State	Number Refused	Bed Capacity	Title of Superintendent			Nurse Training Schools in Nonregistered Hospitals	
			M D	R N	Lay	State Accred	Non accred
Alabama	1	45	1				
Arizona	2	32		1	1		
Arkansas	5	92	3		1		1
California	70	1 373	19	13	27		1
Colorado	11	398	3	2	5		1
Connecticut	2	40	1		1		
Delaware							
Dist Columbia	1	25			1		
Florida	9	210	3	3	2		
Georgia	5	30	2		2		1
Idaho	3	50			2		
Illinois	46	1 562	28	1	13	6	
Indiana	23	375	11		7		2
Iowa	14	416	7	1	5		5
Kansas	21	378	7	6	2	1	3
Kentucky	4	46	3				1
Louisiana	1	12	1				
Maine	2	16			2		
Maryland		56	2		1		
Massachusetts	5	165	3		1		3
Michigan	19	570	10	2	4		1
Minnesota	11	236	4	1	4		
Mississippi	1	50			1		
Missouri	29	1 256	14	4	9	1	2
Montana		15			2		
Nebraska	9	177	4	2	3		1
Nevada							
New Hampshire							
New Jersey	6	174	4		1		
New Mexico	2	14	1	1			
New York	22	660	12	4	4		
North Carolina	6	196	2		4		1
North Dakota	4	105	2		2		
Ohio	25	389	15		6		
Oklahoma	16	190	8	1	6		1
Oregon	7	272	1	3	3		
Pennsylvania	20	365	8	1	10		6
Rhode Island	2	77	2				
South Carolina	1	15	1				1
South Dakota	5	187	1	1	3		
Tennessee	7	166	2	2	1		2
Texas	12	350	6	1	4	2	
Utah	1	4	1				
Vermont							
Virginia	2	56	2				
Washington	11	161	4	1	5		
West Virginia	2	33	1		1	1	
Wisconsin	7	219	4		7		
Wyoming	4	117	2	2		1	
Total	462	11 379	205	53	153	12	33

The tremendous increase in the number and capacity of hospitals during the last two decades has made it all the more necessary that their character and the manner in which they are conducted should be ascertained, so as to offset the accompanying danger from hospitals conducted for revenue only, to the disregard of the welfare of their patients

Among the reasons for omitting hospitals from the register are, for example, that they are controlled by persons known to be impostors or incapable, either morally or professionally, of providing efficient care for the sick or injured, those exploiting fad quick cures for cancer, consumption and the like, and those in which criminal or otherwise unethical practices are carried on The inclusion of other institutions which have not been specifically approved either by the Council on Medical Education and Hospitals or by the American College of Surgeons may be taken as an indication that evidence concerning irregular or unsafe practices in these institutions has not been made available

STATISTICS OF UNREGISTERED HOSPITALS

Altogether, 462 institutions, for some of the foregoing reasons, have been omitted from the Register, and their total capacity is 11,379 beds, a negligible proportion of the entire hospital facilities in the United States Even then a large portion of the 11,379 beds are not devoted to the care of the sick, as to those who are in need of rest and quiet or also, who may be convalescing Among these institutions are health resorts and institutions of a borderline type It is regrettable, however, that some of them do admit the seriously sick and injured for treatment

Of the 462 unregistered hospitals, 205 are in charge of medical doctors, most of whom are licensed in the states in which the hospitals are located

NURSE TRAINING SCHOOLS

Last year, for the first time, were presented complete data in regard to nursing schools and it is noted that in the past year the total number of schools in the United States has increased from 2,155 to 2,286, while the total number of hospitals without nurse training schools decreased from 5,261 in 1926 to 4,521 in 1927 New York shows the greatest increase in the number of training schools, and seven states show no increase Nevada remains the only state which does not report any training schools and New Mexico still has the smallest number of schools, three, a gain of one school over the preceding year Pennsylvania continues to rank first in number of training schools, reporting a total of 194 schools New York again holds second place with 179 schools, a gain of eighteen over last year, Illinois reports five new schools, making a total of 152, and Massachusetts reports a total of 125 schools —a gain of thirteen over last year Other states report increases of from one to twelve schools during the past year Oklahoma, Oregon, Pennsylvania, Rhode Island South Carolina and Texas report decreases in the number of training schools

The number of training schools in hospitals which for various reasons, are considered unethical and as unsafe places for the care of sick and injured people, has increased from thirty-eight in 1926 to forty-eight in 1927 However, there is a gratifying decrease in the number of such training schools approved by the state boards of nursing examiners In 1926, eighteen of these schools were reported approved, while in 1927 the number dropped to twelve, six of which are operating in Illinois In 1926, Pennsylvania reported but one training school in an unethical hospital, in 1927, the number had suddenly increased to six, the largest number in any state except Illinois, which has eleven The Pennsylvania schools, however, are not state accredited The number of states—twenty-one—harboring such schools remains the same as in 1926, but

Oregon and Washington, which last year had one unethical school each, now have a clean slate, while Michigan and West Virginia each have gained one such school the last year

The data given here and in the list beginning on page 423 were supplied by the state boards of nurse examiners and by hospitals themselves

PHYSICIANS CONNECTED WITH HOSPITALS

Exactly 5,100 hospitals have sent in the names of the physicians that attend patients in those hospitals, including, also, interns and resident physicians as well as physicians serving as superintendents or administrative heads These 5,100 hospitals report a grand total of 107,734 names of physicians connected with them Staff members reported, exclusive of the house staff, number 95,716 The resident physicians named number 5,114, interns, 4,443, and physicians acting as superintendents or administrative heads, 2,461

From the fact that only 5,100 hospitals out of a total of 6,807 turned in lists of their physicians, it is evident that not all of the physicians connected with hospitals in this country are accounted for in this census

By tracing each of the 5 114 resident physicians through the biographic files of the American Medical Association, it is found that 1,136 of them are serving regular residentships on an educational basis in hospitals approved for residencies in specialties by the Council on Medical Education and Hospitals, and the remaining 3,978 are employed in the usual role of resident physician It is certain that a good percentage of the latter are serving their residentship from an educational motive Every one of the 4,443 interns has been verified and his internship noted in the biographic files

How many duplicates are included in the total of 107,734 names of physicians connected with hospitals is not known After checking the duplicates in certain portions of the country and then making due allowances, it is certain that there are more than 80,000 physicians connected with hospitals, on a conservative estimate

REQUIREMENTS FOR THE LISTS OF APPROVED HOSPITALS

Prepared by the Council on Medical Education and Hospitals of the American Medical Association

ESSENTIALS IN A HOSPITAL APPROVED FOR INTERNS

I General Statements

1 Welfare of the Patients —Only hospitals in which the entire plant and personnel constantly function primarily in the interest of the patient are acceptable for accrediting as institutions for the training of interns, however abundant the equipment of the hospital may be

2 Minimum Number of Beds and Patients —The hospital should have at least 100 beds and an average of seventy-five or more patients

3 Only General Hospitals Eligible —The hospital shall provide a variety of medical, surgical, obstetric and children patients in reasonable proportion, so as to offer interns and graduate students that clinical training which every medical practitioner should have A hospital that is lacking in types of patients, such as maternity cases or children, may, by an approved working affiliation with other nearby institutions, supply the additional clinical material necessary The rotating service is recommended, but teaching hospitals of high grade and reputable medical schools which have long followed the straight service should be permitted to continue that method without prejudice

4 Interns' Living Quarters —The hospital shall provide reasonably comfortable living quarters for the interns with opportunities for recreation, both indoor and outdoor, appropriate to the locality and environment of the hospital

II The Staff of the Hospital

1 Character of Staff —There must be an organized staff of ethical physicians who hold the degree of doctor of medicine from acceptable medical schools, who are of unquestioned professional and moral integrity, who are proficient in general practice or in the special fields to which they devote themselves, who give personal attention to the patients under their charge, and who will provide adequate facilities, instruction and that sympathetic cooperation without which interns and graduate students cannot obtain the practical training for which they are serving the hospital

2 Graduates in Medicine —The hospital must not only confine membership on its staff to reputable practitioners who have received the degree of doctor of medicine from medical schools considered acceptable by the Council on Medical Education and Hospitals of the American Medical Association, but also must apply this ruling to every person permitted to treat or prescribe for the sick in the hospital or in any of its departments The ruling does not apply, of course, to the treatment of patients by nurses, masseurs and other like assistants, when acting under the orders of any physician on the attending staff

3 Resident Physicians —It is desirable in all instances, and required in hospitals with four or more interns, that there be one or more full time resident physicians who have had at least one year's intern experience, whose duties shall include *cooperation with the members of the staff in supervising the* work and instruction of the interns and graduate students Residents, however, must not be actually substitutes for the staff physicians, who shall individually be responsible for the intern s welfare, instruction and practical training The interns themselves, however, should assume responsibility for the examination and treatment of patients while they, in turn, are under the supervision of the staff physicians of the hospital

4 Staff Conferences and Meetings —It is expected that there shall be, at least fortnightly, clinical-pathologic conferences or other regular staff meetings at which histories and clinical findings in selected patients may be reviewed and particularly where, in the death of patients, special study, including necropsy findings when possible, shall be undertaken The interns and graduate students should be requested to attend these meetings and to take part in the discussions and procedures

III The Equipment of the Hospital

1 Laboratory —There must be a clinical laboratory in charge of a pathologist of attainments and standing at least equal to those of other staff members, who shall be in charge of the laboratory supervise the work of, and give instruction to the interns Tissues removed at all operations should be routinely submitted to the laboratory for examination, and findings regularly reported and filed with the respective records The laboratory work of the interns shall include not only the simple clinical tests, but also the more technical chemical, bacteriologic and serologic work and examinations

2 Necropsies —The percentage of necropsies in a hospital has come to be recognized as an index of its genuine educational activities After January 1 1928 no hospital will be approved for the training of interns which does not have a record of necropsies on at least 10 per cent of all deaths in the hospital and after January 1, 1929, the minimum required will be 15 per cent The records of these necropsies must be kept on file and shall include a protocol of each autopsy as well as a statement of the clinical findings As a rule, coroners' autopsies are unsatisfactory and cannot be considered as filling this requirement

3 Roentgen Ray —The roentgen-ray department shall be in charge of a roentgenologist whose attainments are at least equal to those of other staff members and who shall supervise and instruct the interns in all essential phases of roentgenology The department must be equipped to do roentgenographic, fluoroscopic, and therapeutic work The intern should receive instruction both in regard to the technic and dangers of roentgen-ray application and also in plate reading and in the therapeutic uses of the roentgen ray

4 Anesthesia —The hospital is expected to provide equipment and facilities for, and expert supervision, preferably by a staff member, over the administering of the usual kinds of local and general anesthetics and the instruction of interns in anesthesiology

5 Medical Library —There shall be a working medical library, in charge of a librarian, which should contain a useful selection of late editions of standard text and reference books and current files of not less than ten of the better medical journals The library should be inside the hospital building and located where it is readily accessible to the interns and staff members Collections of choice reference books in pathology and clinical diagnosis and in roentgen-ray work should be found respectively in the pathologic and roentgenologic laboratories

IV Histories and Records

1 Complete Histories —There must be complete histories, giving the patient's complaint, physical examination at time of admission to hospital, preliminary diagnosis, laboratory findings, description of operation, if any, daily record of case, final diagnosis, condition and date when discharged from hospital, end-results, and in case of death necropsy findings, if necropsy is performed

2 Endorsement of Histories —The histories should show, by signatures or initials, all persons writing them or parts of them, as well as the staff members by whom the histories are verified Likewise all orders and progress notes should be initialed or signed

3 Records —The records should be in charge of some competent person, preferably a trained office secretary, they should be kept complete and should include an alphabetical index of the patients, and another arranged by diagnoses, and the record should be so filed as to be easily accessible from either index

V The Work of the Intern

1 Supervised Responsibility —The intern should be a graduate of a medical college rated in classes A or B by the Council on Medical Education and Hospitals He should assume, under careful supervision, an increasing responsibility in the diagnosis of diseases, daily observation, care and treatment of the patients under his service

2 Type of Intern Service —In the rotation service there should be a smoothly working plan by which interns proceed in a certain routine through the various services There should not be more than four or five changes in any single year's service, more than this cause unnecessary confusion

3 Scope of Intern Instruction —The hospital, through designated members of its staff, should provide adequate instruction and experience for the interns who, in effect, are fifth year medical students, in medicine, pediatrics, surgery, obstetrics and laboratory work throughout their terms of service For the development of any physician in general practice the importance of a thorough training in pediatrics and obstetrics is especially emphasized

4 Length of Intern Service.—The intern service should cover at least twelve months, and may to great advantage be extended through a longer period

5 Assignment of Work —The number of patients assigned to each intern and the routine work required of him should not demand more than eight (at most, ten) hours daily He should have ample time not only to study and read up about his patients, but also to permit of a reasonable amount of recreation

6 Grading of Intern Service —In larger hospitals, or those having four or more interns, the interns may with advantage begin their work at different times of the year and pass through junior and senior services, or the services may be further subdivided into first and second junior and first and second senior services Through some such arrangement the hospital retains a constant supply of experienced interns The training of the intern is enhanced thereby, since junior interns will secure considerable instruction from the seniors

7 Clinical Laboratory Work —The intern should himself perform the laboratory work, or at least have the full benefit of laboratory findings, for each patient under his charge. A reasonable amount of work in the various laboratory tests—urine, blood, gastric contents, stools—should be performed by the intern to give him the desired amount of laboratory experience, but he should not have to undergo an unreasonable amount of routine work Laboratory experience in the more technical chemical, bacteriologic and serologic work may well be obtained in assisting the expert pathologist

8 Necropsies —The intern, as far as possible, should obtain experience in making necropsies under the direction of the pathologist The hospital also should obtain as high a percentage of necropsies as is possible This percentage is usually looked on as an index of the pathologic teaching carried on as well as of the general professional standard in the hospital

9 Anesthesia —The intern should obtain instruction and experience in the various kinds of anesthetics, under experienced medical supervision unless he is known to have had adequate instruction in his undergraduate medical course

10 Obstetrics —The intern should have experience, under the supervision of designated members of the staff, in the delivery of normal maternity patients and also in assisting in all abnormal cases

11 Roentgen Ray —The intern should receive from the roentgenologist or other qualified member of the hospital staff a reasonable amount of instruction in the technic and the therapeutics of the roentgen ray, as well as in the interpretation of plates and fluoroscopic findings

12 Dietetics —The intern should receive some instruction by a qualified staff member in the feeding of both infants and adults, as required in various diseases or conditions and a reasonable amount of technical experience under a trained dietitian is desirable

13 Rules Regarding Interns —The hospital should have a set of printed or written rules and regulations defining the rights duties and privileges of the interns, a copy of which should be furnished to each intern

14 Purpose of Internship —It is emphasized that the object of the general internship is to round out the medical graduate's training, so as to enable him to enter on the general practice of medicine and not to equip him to enter directly on any specialty For the latter he should obtain further and different instruction

15 Faithful Service from Intern Expected —For all the privileges granted the intern it is understood, of course, that the hospital has the right to expect faithful service in return

VI Admission to the Approved List

1 Application for Approval.—Hospitals that want to be accredited for intern training, either as general or as special hospitals, should apply to the Council on Medical Education and Hospitals of the American Medical Association, 535 North Dearborn Street, Chicago

2 Survey Report —A hospital Survey Report Blank in duplicate will be supplied on application This should be filled out carefully by the superintendent or by some staff member who is acquainted with the intern service in the hospital In addition, the Council desires also (*a*) a list of all physicians who practice in the hospital, (*b*) an outline of the course, or order, in which the intern progresses through the different departments, and (*c*) the name of responsible instructor, length of time and amount of work required of the intern in each department

VII Internships in Special Hospitals

1 Residencies —It is hoped that hereafter all internships or residencies in the specialties whether offered in special hospitals or the special departments of general hospitals, will be open only to those physicians who have already completed an internship in a general hospital or have obtained its full equivalent in general practice The turning out of amateur specialists should be discontinued

ESSENTIALS IN HOSPITALS APPROVED FOR RESIDENCIES IN SPECIALTIES

I General Statements

1 Welfare of the Patients—Only a hospital in which the entire plant and personnel constantly function primarily in the interest of the patient is acceptable for the training of a physician in a specialty, however abundant the equipment of the hospital may be

2 Capacity and Type of Service—The hospital should have enough patients with certain types of ailments to afford the resident physician opportunity for instruction, observation and experience in the specialty or specialties in which residencies are offered Residencies in the following specialties are considered

Anesthesia
Cancer
Cardiography
Contagious Diseases
Dentistry
Dermatology
Epilepsy
Fractures
General Practice
Gynecology and Obstetrics
Leprology
Medicine
Mental Deficiencies
Metabolic Disorders
Neurology
Neuropsychiatry
Ophthalmology
Orthopedics
Otolaryngology
Pathology
Pediatrics
Physical Therapy
Radiology
Roentgenology
Surgery
Tropical Medicine
Tuberculosis
Urology

II The Staff of the Hospital

1 Character of Staff—There must be an organized staff of ethical physicians who hold the degree of doctor of medicine from acceptable medical schools, who are of unquestioned professional and moral integrity, who are proficient in the fields to which they devote themselves who give personal attention to the patients under their charge, and who provide adequate facilities, instruction and that sympathetic cooperation without which graduate students cannot obtain the practical training for which they are serving the hospital.

2 Graduates in Medicine—The hospital must not only confine membership on its staff to reputable practitioners who have received the degree of doctor of medicine from medical schools considered acceptable by the Council on Medical Education and Hospitals of the American Medical Association, but also must apply this ruling to every person permitted to treat or prescribe for the sick in the hospital or in any of its departments The ruling does not apply, of course, to the treatment of patients by nurses masseurs and other like assistants, when acting under the orders of a physician on the attending staff

3 Staff Conferences and Meetings—It is expected that there shall be, at least monthly, clinical-pathologic conferences or other regular staff meetings at which histories and clinical findings in selected patients may be reviewed and particularly where, in the death of patients, special study including necropsy findings when possible, shall be undertaken The residents should be required to attend these meetings and to take part in the discussions and procedures

III The Equipment of the Hospital

1 Laboratory—There must be a clinical laboratory in charge of a pathologist of attainments and standing at least equal to those of other staff members, who shall be in charge of the laboratory, supervise the work of, and give instruction to the residents

2 Roentgen Ray—The roentgen-ray department must be in charge of a roentgenologist whose attainments are at least equal to those of other staff members and who shall supervise all the essential phases of roentgenology The department must be equipped to do roentgenographic, fluoroscopic, and therapeutic work The resident should receive instruction both in regard to the technic and dangers of roentgen-ray application and also in plate reading and in the therapeutic uses of the roentgen ray

3 Anesthesia—The hospital is expected to provide equipment and facilities for, and expert supervision, preferably by a staff member, over the administering of the usual kinds of local and general anesthetics and instruction in anesthesiology

4 Medical Library—There must be a working medical library, containing a useful selection of late editions of standard text and reference books and current files of not less than ten of the better medical journals The library should be inside the hospital building where it is readily accessible to the residents and other staff members, and should have a librarian or competent clerk in charge Collections of choice reference books in pathology and clinical diagnosis and in roentgen-ray work should be found respectively in the pathologic and roentgenologic laboratories Privilege may be obtained of borrowing books from other large medical libraries

IV Histories and Records

1 Complete Histories—There must be complete histories giving the patient's complaint, physical examination at time of admission to hospital, preliminary diagnosis, laboratory findings, description of operation, if any, daily record of case, final diagnosis, condition and date when discharged from hospital, end-results, and, in case of death, necropsy findings, if necropsy is performed

2 Endorsement of Histories—The histories should show, by signatures or initials, all persons writing them or parts of them, as well as the staff members by whom the histories are verified Likewise all orders and progress notes should be initialed or signed

3 Records—The records should be in charge of a competent person, preferably a trained office secretary, they should be kept complete and should include an alphabetical index of the patients, and another arranged by diagnoses

V The Work of the Resident

1 Supervised Responsibility—The resident should assume, under supervision, an increasing responsibility in the diagnosis of diseases and the daily observation, care and treatment of the patients under his service

2 Length of Service—The resident's term of service should cover twelve months, or a sufficient period for thorough training in the particular specialty which is given

3 Clinical Laboratory Work—The resident should himself perform the laboratory work or have the full benefit of laboratory findings for each patient under his charge The resident should secure a reasonable degree of laboratory experience, and particularly an experience in the more technical, chemical, bacteriologic and serologic work which may well be obtained in assisting the expert pathologist

4 Necropsies—The percentage of necropsies in a hospital has come to be recognized as an index of its genuine educational activities No hospital will be approved for the training in the specialties which does not have a record of necropsies on at least 10 or 15 per cent of all deaths in the hospital The records of these necropsies should be kept on file and include protocols of the autopsies as well as statements of the clinical findings

5 Purpose of Residency—It is emphasized that the object of the residency is to provide a training, so as to make recent graduates who have already completed internships, more proficient in the given specialty

6 Faithful Service from Resident Expected—For all the privileges granted the resident it is understood, of course, that the hospital has the right to expect faithful service in return

VI Admission to the Approved List

1 Application for Approval—Hospitals that want to be accredited for the training of residents, in their sixth or other advance years in medicine, should apply to the Council on Medical Education and Hospitals of the American Medical Association, 535 North Dearborn Street, Chicago

HOSPITALS REGISTERED BY THE AMERICAN MEDICAL ASSOCIATION

The following list contains the names of 6,807 hospitals and sanatoriums It omits the names of 462 hospitals which have been investigated and disapproved The inclusion of the names of other institutions which have not been specifically approved either by the Council on Medical Education and Hospitals or by the American College of Surgeons may be taken as an indication that evidence concerning irregular or unsafe practices in these institutions has not been made available to the Council on Medical Education and Hospitals

The facts and figures given here were supplied by hospitals themselves during October, November and December, 1927

KEY TO SYMBOLS AND ABBREVIATIONS

★ Approved for general internship the fifth year in medicine by the Council on Medical Education and Hospitals
+ Approved for residency in a specialty for graduates in medicine who have already had a general internship or its equivalent in practice
▲ Approved by the American College of Surgeons as meeting their minimum standards unconditionally

1 Nurse training school accredited by state board of nurse examiners
2 Hospital department or infirmary of an institution such as a school orphanage or reformatory
3 No report having been received for the 1927 census the latest previous report was used
a Expansion in process or contemplated

The column headed 'Type of Service" tells what conditions or diseases or injuries are treated in each institution, as follows

Card	Cardiac	FENT	Eye Ear, Nose and Throat	Indus	Industrial	Pella	Pellagra
Chil	Children s	FeMi	Feebleminded	Iso	Isolation	Sk&Ca	Skin and Cancer
Conv	Convalescence and Rest	Gen	General	Mater	Maternity	Trach	Trachoma
Dr&Al	Drug and Alcoholic	Heart	Heart	N&M	Nervous and Mental	TB	Tuberculosis
Epil	Epileptic	Incur	Incurable	Ortho	Orthopedic	Vener	Venereal

The column headed 'Control' indicates for each institution the ownership, control, or auspices under which it is conducted, as follows

Church	Church	County	County	Indep	Independent	Indus	Industrial
City	City	Fed	Federal	Indian	Indian	Part	Partnership
Cy&Co	City and County	Frat	Fraternal	Indiv	Individual	State	State

POPULATION OF CITIES AND TOWNS

The population, given after the names of cities and towns, is according to U S Census Bureau estimates for 1926 on cities that had 10,000 or over in 1920 For towns having less than 10,000 in 1920, the U S Census Bureau returns for that year are used being the latest reliable data available State census returns for 1925 are used for Florida, Iowa, Kansas, Massachusetts, New York, Rhode Island, South Dakota and Wyoming

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ALABAMA

City, Pop—County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt MD RN Lay	Year Est
Albany 7 652—Morgan							
Benevolent Society Hosp	Gen	40	12	Indep	Yes[1]	R N	1914
Albertville 1 666—Marshall							
Sand Mountain Infirmary	Gen	12	New	Indiv	No	M D	1927
Aldrich 458—Shelby							
Aldrich Prison Hospital[2]	Gen	10	5	State	No	Lay	1913
Alexander City 2 293—Tallapoosa							
Russell Hospital	Indus	54	10	Indus	Yes[1]	R N	1923
Andalusia 4 023—Covington							
Andalusia City Hospital	Gen	20	2	Indep	Yes	R N	1920
Covington County Hospital	Gen	25	14	County	Yes[1]	M D	1920
Anniston 21 000—Calhoun							
St Luke s Hospital	Gen	30	20	Indep	Yes[1]	R N	1912
St Michaels and All Angels Clinic	Gen	16	11	Church	No	R N	1922
Sellers Hospital	Gen	42	10	Indiv	Yes[1]	R N	1922
Station Hosp	Gen	50	7	Army	No	M D	1917
Atmore 1 775—Escambia							
Atmore Infirmary	Gen	14	2	Indiv	No	R N	1925
Bellamy 317—Sumter							
Bellamy Hospital	Gen	16	5	Indus	No	M D	1925
Bessemer, 22 600—Jefferson							
Bessemer General Hospital▲	Gen	55	46	Indep	Yes[1]	R N	1911
Birmingham 210 000—Jefferson							
Alabama Boys Indus Sch[2]	Gen	28	8	State	No	Lay	1900
Birmingham Baptist Hosp ▲	Gen	110	77	Church	Yes[1]	R N	1912
Birmingham General Hosp	Gen	50	25	Indiv	Yes[1]	Lay	1922
Children's Home Hospital[2]	Chil	20	15	City	No	R N	1902
Children s Hospital of Birmingham ▲	Chil	50	27	Indep	No	R N	1912
Fraternal Hospital	Gen	50	34	Indep	Yes[1]	R N	1919
Gorgas Hotel Hospital+▲	Gen	48	2	Indep	Yes	M D	1920
Hill Crest Sanitarium	N&M	25	16	Indep	No	M D	1925
Hillman Hospital ★▲	Gen	140	125	County	Yes[1]	M D	1889
Jefferson Sanatorium	TB	75	71	County	No	M D	1919
Norwood Hospital ▲	Gen	150	80	Indep	Yes[1]	R N	1916
Miss Quinn s Nursing Home	Conv	12	8	Indiv	No	Lay	1922
St Vincent s Hospital +▲	Gen	125	94	Church	Yes[1]	R N	1900
Salvation Army Home and Hospital	Mater	56	46	Church	No	Lay	1903
South Highlands Infirmary▲	Gen	150	89	Part	Yes[1]	M D	1910
Tuggle Institute Hospital	Gen	25	10	Frat	Yes[1]	R N	1923
Brewton 2 682—Escambia							
Brewton Memorial Hosp	Gen	16	5	Indiv	No	R N	1922
Clanton 1 411—Chilton							
Central Alabama Hospital	Gen	30	13	Indep	Yes[1]	R N	
Corona 1 500—Walker							
Corona Hospital	Gen	12	3	Indiv	No	M D	1903
Demopolis 2 779—Marengo							
Bailey Hospital	Gen	14	6	Indiv	No	M D	1910
The Juanita Coleman Hosp	Gen	20	4	Indiv	Yes	Lay	1923
Dr Savage s Hospital	Gen	15	3	Indiv	No	M D	1923
Dothan 14 500—Houston							
Dr M S Davie s Private Hospital	Gen	50	26	Indiv	Yes[1]	R N	1916
Frasier Hospital▲	Gen	50	40	Indiv	Yes[1]	R N	1917
Moody Hospital ▲	Gen	94	52	Indiv	Yes[1]	R N	1913
East Tallassee 2 040—Tallapoosa							
Community Hospital	Gen	18	6	Indep	Yes	R N	1925
Enterprise 3 013—Coffee							
Coffee County Mem Hosp	Gen	40	18	County	Yes[1]	R N	1926
Eufaula 4 939—Barbour							
The Britt Infirmary	Gen	52	32	Indiv	Yes[1]	R N	1920
Salter Hospital	Gen	50	35	Indiv	Yes[1]	R N	1923
Fairfield 4 978—Jefferson							
Employees Hospital of the Tenn Coal Iron & R R Co ★+▲	Indus	280	210	Indus	Yes[1]	M D	1919
Fairhope 853—Baldwin							
Bay View Sanatorium	Gen	18	New	Indiv	No	M D	1927
Falls City 85—Winston							
Snow Hospital	Gen	8	6	Indiv	No	R N	1923
Florala 2 633—Covington							
Young Infirmary and Lakeview Hospital	Gen	40	18	Indiv	Yes[1]	R N	1922
Florence 13 100—Lauderdale							
Eliza Coffee Memorial Hosp	Gen	50	30	City	Yes[1]	R N	1919
Gadsden 20 100—Etowah							
Etowah County Tuberculosis Hospital	TB	24	10	County	No	G N	1924
Holy Name of Jesus Hosp	Gen	35	18	Church	Yes[1]	R N	1917
Ralls' Sanatorium	Gen	50	30	Indiv	Yes[1]	Lay	1906
Gorgas —Walker							
Alabama Power Co Hosp	Indus	17	8	Indus	No	M D	1922
Greensboro 1,809—Hale							
Greensboro Hospital	Gen	14	6	Indep	No	R N	1924
Greenville 3,471—Butler							
Spier's Hospital	Gen	35	9	Indiv	No	R N	1923
Stabler Infirmary	Gen	14	3	Indiv	No	Lay	1923
Gurley 727—Madison							
Williamson & Graham Private Infirmary	Gen	20	8	Indiv	No	Lay	1923
Huntsville 8 018—Madison							
Huntsville Hospital	Gen	75	20	Indep	Yes[1]	R N	1904
Jasper 3 246—Walker							
Walker County Hospital ▲	Gen	61	20	Indep	Yes[1]	R N	1924
Langdale 510—Chambers							
Langdale Emergency Hosp	Indus	10	2	Indus	No	Lay	1919
Mobile 66 800—Mobile							
Alabama Maternity & Infants Home	Mater	10	6	Church	No	R N	1911
City Hospital ▲	Gen	175	95	City	Yes[1]	R N	1830
Inge Bondurant Sanatorium	Gen	35	22	Part	Yes[1]	Lay	1899
Mobile County Poor Asylum Hospital[2]	Gen	16	6	County	No	Lay	
Mobile County Tuberculosis Sanitarium	TB	30	25	Indep	No	R N	1923
Mobile Infirmary	Gen	60	40	Indep	Yes[1]	R N	1910
Providence Infirmary ▲	Gen	100	50	Church	Yes[1]	R N	1858
U S Marine Hospital No 13▲	Gen	90	75	USPHS	No	M D	1831
Monroeville 1 017—Monroe							
Monroeville Infirmary	Gen	12	3	Indiv	No	Lay	1926
Montevallo 850—Shelby							
Peterson Hall Infirmary of Alabama College[2]	Gen	35	10	State	No	M D	1914
Montgomery 47 000—Montgomery							
Fraternal Hospital	Gen	32	20	Indiv	Yes[1]	R N	1922
Hale Infirmary	Gen	35	20	Indep	Yes[1]	R N	1887
Highland Park Sanatorium	Gen	50	17	Indiv	Yes[1]	M D	1893
Kilby Prison Hospital[2]	Gen	40	28	State	No	M D	1922
Laura Hill Hospital	Gen	50	45	Part	Yes[1]	R N	1898

ALABAMA—Cont

City Pop —County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt M.D R N Lay	Year Est
Miriam Jackson Home	Gen	24	20	Church	No	Lay	1923
Montgomery Memorial Hosp	Gen	72	40	Church	Yes[1]	Lay	1924
Montgomery Tuberculosis Sanatorium	TB	60	30	Indep	No	R.N	1911
Rice's Children's Hospital	Chil	6	2	Indiv	No	M D	1927
St Margaret's Hospital	Gen	130	60	Church	Yes[1]	R N	1903
Station Hospital	Gen	13	4	Army	No	M D	1917
Yarbrough's Sanatorium	Conv	30	20	Indiv	No	Lay	1910
Mountain Creek 375—Chilton							
Jefferson Manly Falkner Soldiers Home of Alabama[2]	Gen	20	16	State	No	M D	1900
Mt Vernon 810—Mobile							
Searcy Hospital	N&M	1 135	1 000	State	No	M D	1901
Opelika 4 960—Lee							
East Alabama Hospital	Gen	30	10	Indep	Yes[1]	M D	1920
Ozark 2 518—Dale							
Grace Hospital	Gen	16	4	Indiv	No	M D	1926
Prattville 2 316—Autauga							
Dr Taylor's Private Hosp	Gen	10	5	Indiv	No	R N	1923
Roanoke 3 814—Randolph							
The Knight Sanitorium	Gen	30	20	Indep	Yes[1]	M D	1919
Scottsboro 1 417—Jackson							
Hodges Hospital	Gen	20	8	Indiv	No	M D	1924
Selma 17 200—Dallas							
Alabama Baptist Hospital ▲	Gen	65	35	Church	Yes[1]	Lay	1921
Alabama Methodist Orphanage	Chil	16	4	Church	No	Lay	1890
Burwell Infirmary	Gen	25	12	Indiv	Yes[1]	R N	1907
Goldsby King Mem Hosp ▲	Gen	52	33	Indep	No	M D	1921
Good Samaritan Hospital	Gen	35	20	Church	No	Lay	1922
Vaughan Memorial Hosp ▲	Gen	60	4	Indep	Yes[1]	R N	1911
Sheffield 6 682—Colbert							
Colbert County Hospital	Gen	60	40	Cy&Co	Yes	R N	1918
Sylacauga 2 141—Talladega							
Drummond Fraser Hosp ▲	Indus	50	15	Indus	Yes[1]	M D	1917
Memorial Hospital	Gen	20	New	Indep	Yes	R N	1927
Sylacauga Infirmary ▲	Gen	44	15	Indep	Yes[1]	R.N	1921
Talladega 6 546—Talladega							
Alabama School for Deaf[2]	Gen	12	6	State	No	Lay	1858
Citizens Hospital	Gen	50	15	Indep	Yes[1]	R N	1925
Goodnow Hospital	Gen	20	3	Indep	No	R.N	1910
Troy 5 696—Pike							
Beard Memorial Hospital	Gen	35	10	Indiv	Yes[1]	R N	1920
Tuscaloosa 13 200—Tuscaloosa							
Bryce Hospital	N&M	2 280	2 200	State	Yes[1]	M D	1860
Druid City Hospital	Gen	55	40	City	Yes[1]	R N	1920
Tuskegee 2 475—Macon							
Macon County Hospital	Gen	15	5	Part	No	R.N	1924
U S Veterans Hosp No 91▲	Gen	600	500	VetBur	No	M D	1923
Tuskegee Institute 118—Macon							
John A Andrews Memorial Hospital *▲	Gen	75	40	Indep	Yes[1]	M D	1892
Wetumpka 1 520—Elmore							
State Convict Tuberculosis Hospital[2]	TB	50	40	State	No	M D	1917

Total registered hospitals in Alabama 107 capacity 8 704 average census 6,340 Hospitals not admitted to the register 1 capacity 15

ARIZONA

City Pop —County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt M D R.N Lay	Year Est
Ajo 50—Pima							
New Cornelia Copper Company Hospital	Indus	32	25	Indus	No	M D	1916
Bisbee 9,705—Cochise							
Calumet and Arizona Hosp	Indus	45	12	Indus	No	M D	1903
Copper Queen Hospital	Indus	44	22	Indus	No	M D	1895
Clifton 4 164—Greenlee							
Phelps Dodge Hospital	Indus	10	1	Indus	No	Lay	
Douglas 9 916—Cochise							
Calumet Hospital	Gen	22	10	Indiv	No	M D	1902
Cochise County Hospital	Gen	45	30	County	No	M D	1911
Station Hospital	Gen	15	4	Army	No	M D	1923
Flagstaff 3 186—Coconino							
Coconino County Hospital[2]	Gen	15	10	County	No	Lay	1905
Mercy Hospital	Gen	10	5	Indiv	No	M.D	1910
Florence 161—Pinal							
Arizona State Prison Hosp[2]	Gen	12	6	State	No	M D	1908
Pinal County Hospital	Gen	25	15	County	No	M.D	1893
Fort Apache 98—Navajo							
Theodore Roosevelt School Hospital	Gen	40	11	Indian	No	Lay	1923
Fort Defiance 150—Apache							
Hospital of Good Shepherd	EENT	35	27	Church	No	R.N	1894
Navajo Indian Gen Hosp	Gen	30	28	Indian	No	Lay	1910
Navajo Tuberculosis Sanat	TB	28	25	Indian	No	Lay	1912
Fort Huachuca 1 214—Cochise							
Station Hospital	Gen	65	20	Army	No	M D	1880
Ganado 100—Apache							
Ganado Mission Presbyterian hospital[3]	Gen	24	15	Church	No	M D	1913
Globe 7 044—Gila							
Gila County Hospital	Gen	50	40	County	No	R N	1908
Old Dominion Copper Mining Company Hospital	Indus	15	7	Indus	No	Lay	1905
Hayden 582—Gila							
Hayden Hospital	Indus	12	4	Indus	No	M D	1912
Indian Wells 26—Navajo							
Good Samaritan Hospital	Gen	15	8	Church	No	R N	1912
Jerome 2 393—Yavapai							
United Verde Hospital	Indus	46	32	Indus	No	M D	1916
Keams Canon 33—Navajo							
Hopi Hospital	Gen	32	12	Indian	No	Lay	1913
Kingman 855—Mohave							
Mohave County Hospital	Gen	25	13	County	No	R.N	1922
Leupp 58—Coconino							
Leupp Indian School Hosp	Gen	49	20	Indian	No	M D	1908
McNary 114—Apache							
Cady Lumber Corporation Hospital	Indus	9	4	Indus	No	M.D	1924
Mesa 3 036—Maricopa							
South Side District Hospital	Gen	20	9	Indep	No	R N	1920
Miami 6 689—Gila							
Miami Inspiration Hospital▲	Indus	40	20	Indus	No	M D	1910
Mohave City 100—Mohave							
Fort Mojave Indian School Hospital	Chil	17	4	Indian	No	Lay	1890
Morenci 5 100—Greenlee							
Phelps Dodge Hospital	Indus	18	7	Indus	No	Lay	
Nogales 5 199—Santa Cruz							
St Joseph's Hospital	Gen	20	8	Church	No	Lay	1906
Station Hospital	Gen	50	20	Army	No	M D	1917
Phoenix 38 669—Maricopa							
Arizona Deaconess Hosp ▲	Gen	97	62	Church	Yes[1]	Lay	1911
Arizona Sanatorium	TB	35	22	Part	No	Lay	1925
Arizona State Hospital	N&M	725	670	State	No	M D	1884
Booker T Washington Memorial Hosp & Sanat	Gen	25	8	Indiv	No	M D	1922
Helen Lee Sanatorium	TB	14	10	Indiv	No	R N	1921
Maricopa County Farm[2]	Gen	20	10	County	No	M D	1890
Maricopa County Tuberculosis Hospital	TB	35	25	County	No	Lay	1911
Monte Vista Sanatorium	TB	12	8	Indiv	No	R N	1925
Mountain Air Sanatorium	TB	24	10	Indiv	No	Lay	1919
Phoenix Indian Sch Hosp	Gen	40	23	Indian	Yes	M D	1890
Phoenix Sanatorium	TB	75	25	Indiv	No	M.D	1915
Roanoke Sanatorium	TB	20	15	Indiv	No	Lay	1907
St Joseph's Hospital ▲	Gen	160	105	Church	Yes[1]	Lay	1900
St Luke's Home	TB	75	50	Church	No	Lay	1907
Shady Lawn Sanatorium	TB	20	15	Indiv	No	Lay	1916
Sunny Rest Sanatorium	TB	30	15	Indiv	No	Lay	1916
United States Indian Sanit	TB	130	98	Indian	No	Lay	1909
Valley View Sanatorium	Conv	12	6	Indiv	No	R N	1919
Prescott 4 380—Yavapai							
Arizona Pioneer Home[2]	Gen	12	8	State	No	M D	1911
Mercy Hospital ▲	Gen	35	6	Church	No	Lay	1892
Pamsetgaaf Sanatorium	TB	30	20	Indiv	No	M D	1903
St Luke's in the Mountains	TB	46	42	Church	No	Lay	1921
Yavapai County Hospital	Gen	70	50	County	No	M D	1880
Ray 25—Pinal							
Ray Hospital	Indus	15	7	Indus	No	M D	1909
Rice 48—Gila							
U S Indian Service Hospital No 25	Gen	12	4	Indian	No	Lay	1904
Sacaton 315—Pinal							
Pima Indian Hospital	Gen	50	35	Indian	No	Lay	1916
Safford 1 336—Graham							
Morris Squibb Hospital	Gen	7	3	Part	No	M D	1925
Scottsdale 590—Maricopa							
Witt's Desert Home	TB	10	10	Indiv	No	Lay	1924
Sells 61—Pima							
Sells Indian Hospital	Gen	30	21	Indian	No	M.D	1921
Superior 2 535—Pinal							
Magma Hospital	*Indus*	7	2	*Indus*	No	Lay	1915
Tuba City 100—Coconino							
Western Navajo Indian School Hospital	Gen	9	7	Indian	No	Lay	1916
Tucson 26 733—Pima							
Anson Rest Home	TB	24	20	Part	No	R N	1925
Barfield Sanatorium	TB	32	21	Indiv	No	Lay	1922
Desert Sanatorium of Southern Arizona	TB	80	19	Indep	No	R.N	1926
Fairview Sanatorium	TB	25	16	Indiv	No	R.N	1926
Hillcrest Sanatorium	TB	30	25	Indiv	No	G N	1925
Home Sanatorium	Conv	13	9	Indiv	No	Lay	1923
Pima County Hospital[3]	Gen	30	24	County	No	Lay	1923
St Luke's in-the-Desert Sanitarium	TB	32	32	Church	No	Lay	1917
St Mary's Hospital and Sanatorium	Gen	120	67	Church	Yes[1]	Lay	1880
Southern Methodist Hospital and Sanatorium	Gen	60	34	Church	No	Lay	1908
Stork's Nest	Mater	16	8	Indiv	No	R N	1920
Tucson Tubercular Charity Hospital	TB	40	40	Indep	No	Lay	1916
United States Veterans Hospital No 51 ▲	TB	252	238	VetBur	No	M.D	1920
Valentine 164—Mohave							
Truxton Canon Indian Hospital	Gen	16	5	Indian	No	Lay	1914
Whipple — Yavapai							
United States Veterans' Hospital No 50▲	TB	600	480	VetBur	No	M.D	1920
Whiteriver 52—Navajo							
Fort Apache Indian Hosp	Gen	26	9	Indian	No	Lay	1915
Williams 1 350—Coconino							
Williams Hospital	Gen	12	4	Indiv	Yes	M D	1908
Yuma 4 237—Yuma							
Cochan Hotel Sanatorium	Gen	25	9	Indiv	No	M D	1926
Fort Yuma Indian Hospital	Gen	25	5	Indian	No	Lay	1905
Yuma General Hospital	Gen	30	15	Indep	No	R N	1915

Total registered hospitals in Arizona 83 capacity, 4,296 average census 2 946 Hospitals not admitted to the register 2 capacity 32.

ARKANSAS

City Pop —County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt M D R N Lay	Year Est
Arkadelphia 3,311—Clark							
Moore and Wallis Sanit	Gen	10	4	Indiv	No	M D	1919
Townsend Sanitarium	Gen	10	4	Part	No	M D	1919
Batesville 4 299—Independence							
Door Gray Johnston and Craig Sanitarium	Gen	24	5	Part	No	M D	1905

ARKANSAS—Cont City Pop—County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt M D R N Lay	Year Est
Bauxite 1 527—Saline							
American Bauxite Company Hospital	Indus	14	3	Indus	No	M D	1908
Benton 2 933—Saline							
Blakely's Sanitarium	Gen	12	3	Indiv	No	M D	1924
Booneville 2,199—Logan							
Arkansas Tuberculosis Sanatorium	TB	365	330	State	No	M D	1910
Camden 3 238—Ouachita							
Camden Hospital	Gen	25	10	Indep	No	R N	1925
Charleston 731—Franklin							
Bollinger Hospital	Gen	18	5	Indiv	No	M D	1922
Clarksville 2,127—Johnson							
Johnson County Hospital	Gen	15	4	Indep	No	Lay	1924
Conway 4 564—Faulkner							
Faulkner County Hospital	Gen	30	16	Indep	Yes[1]	R N	1925
Crossett 2 038—Ashley							
Crossett Hospital	Indus	26	16	Indus	Yes[1]	M D	1909
Cummins — Lincoln							
Arkansas State Penal Hospital[2]	Gen	12	6	State	No	M D	1905
De Queen 2,517—Sevier							
De Queen Hospital	Gen	12	4	Part	No	Lay	1920
Dumas 1 124—Desha							
Dumas Hospital Clinic	Gen	12	5	Indep	No	Lay	1925
El Dorado 3,887—Union							
Henry C Rosamond Memorial Hospital	Gen	37	26	Part	Yes[1]	Lay	1927
Union Infirmary	Gen	30	10	Indiv	No	R N	1925
Warner Brown Hospital ▲	Gen	85	28	Indep	Yes[1]	R N	1920
Eureka Springs 3 [illegible]28—Carroll							
Huntington Hospital[3]	Gen	10	4	Indiv	No	M D	1910
Fayetteville 5 362—Washington							
Fayetteville City Hospital ▲	Gen	55	30	City	Yes[1]	R N	1912
Ft Smith 31 643—Sebastian							
St Edward's Mercy Hosp	Gen	100	48	Church	Yes[1]	Lay	1905
St John's Hospital	Gen	53	25	Indep	Yes[1]	Lay	1910
Sebastian County Hospital -	Gen	125	90	County	No	M D	1902
Sparks Memorial Hospital	Gen	100	38	Indep	Yes[1]	R N	1898
Helena 9 112—Phillips							
Helena Hospital	Gen	35	19	Indep	Yes[1]	R N	1909
Hope 3 639—Hempstead							
Josephine Hospital	Gen	20	6	Part	No	M D	1915
Julia Chester Hospital	Gen	25	12	Indep	No	R N	1925
Hot Springs National Park 11 695—Garland							
Army and Navy Gen Hosp	Gen	300	230	Fed	No	M D	1885
Leo N Levi Memorial Hospital ▲	Gen	60	40	Frat	Yes[1]	R N	1914
Modern Hospital	Gen	10	5	Indiv	No	Lay	1915
New Park Sanitarium	Gen	18	8	Indiv	No	Lay	1921
Ozark Sanatorium	Gen	60	25	Indep	Yes[1]	R N	1890
St Joseph's Hospital	Gen	80	50	Church	Yes[1]	Lay	1888
Woodmen of Union Hosp	Gen	100	60	Frat	Yes	M D	1923
Jonesboro 9 384—Craighead							
St Bernard's Hospital ▲	Gen	100	53	Church	Yes[1]	R N	1900
Lake Village 1 449—Chicot							
South East Arkansas Hosp	Gen	29	6	Indiv	No	M D	1909
Little Rock 74 216—Pulaski							
Ark Confederate Home	Gen	[illegible]	85	State	No	Lay	1891
Arkansas School for Blind	Gen	11	5	State	No	Lay	1859
Baptist State Hospital ▲[3]	Gen	325	90	Church	Yes[1]	Lay	1920
Florence Crittenton Home	Mater	8	4	Indep	No	Lay	1903
Great Southern Fraternal Hospital[3]	Gen	40	18	Frat	Yes[1]	M D	
E S Hilliard Free Children's Hospital	Chil	50	20	Indep	No	Lay	1916
Little Rock General Hosp ▲	Gen	123	60	City	Yes[1]	M D	1889
Missouri Pacific Hospital ▲[3]	Indus	150	70	Indus	No	M D	1924
Pettus Surgical Infirmary	Gen	8	4	Indiv	No	M D	1921
Pulaski County Hospital[3]	Gen	200	194	County	Yes[1]	M D	1870
Royal Circle Hospital[3]	Gen	35	14	Frat	Yes[1]	M D	1921
St Vincent's Infirmary *▲	Gen	135	100	Church	Yes[1]	Lay	1888
State Hospital for Nervous Diseases	N&M	2 750	2 600	State	No	M D	1882
Trinity Hospital ▲	Gen	44	17	Indep	No	Lay	1924
United Friends Hospital	Gen	25	18	Frat	Yes[1]	M D	
Malvern 3 864—Hot Springs							
Malvern Hospital	Gen	8	4	Part	No	Lay	1922
Monticello 2,378—Drew							
Bottoms Baptist Orphanage[2]	Chil	12	4	Church	No	Lay	1895
Morrilton 3 010—Conway							
St Anthony's Hospital	Gen	14	11	Church	No	Lay	1905
Newport 3 771—Jackson							
Dr Gray's Sanitarium	Gen	6	2	Indiv	No	M D	1918
Newport Sanitarium	Gen	15	5	Part	No	R N	1921
North Little Rock 15 696—Pulaski							
United States Veterans Hospital No 78 ▲	N&M	648	635	VetBur	No	M D	1921
Paragould 6 306—Greene							
Dickson Memorial Sanit	Gen	30	15	Indep	Yes[1]	Lay	1905
Paris 1 740—Logan							
Dr Jewell's Infirmary	Gen	24	10	Indiv	No	M D	1925
Paris Hospital	Gen	35	14	Part	No	M D	1910
Pine Bluff 21 611—Jefferson							
Davis Hospital ▲	Gen	50	38	Church	Yes[1]	R N	1920
Prescott 2 691—Nevada							
Cora Donnell Hospital	Gen	30	16	Part	Yes[1]	M D	1913
Ratcliff 257—Logan							
Ratcliff Clinic and Hospital	Gen	20	9	Indiv	No	M D	1923
Rector 1 801—Clay							
Parrish Hospital[3]	Gen	7	3	Indiv	No	M D	1920
Rogers 3 318—Benton							
Home Hospital	Gen	6	3	Indiv	No	R N	1923
Dr Love's Sanitarium	Gen	6	2	Indiv	No	M D	1909
Russellville 4 505—Pope							
Haney Eye Ear Nose and Throat Hospital	Gen	8	2	Indiv	No	Lay	1924
St Mary's Hospital	Gen	35	30	Indep	Yes[1]	R N	1919
United States Trachoma Hospital	Trach	15	12	USPHS	No	M D	1922
Searcy 2 836—White							
Wakenight Sanitarium	Gen	15	8	Indiv	Yes	R N	1924
Siloam Springs 2 569—Benton							
Siloam Springs Hospital	Gen	10	6	City	No	R N	1913
Taylor 275—Columbia							
Bertie Lee Horn Sanatorium	Gen	12	4	Indiv	No	M D	1915
Texarkana 8 257—Miller							
Jamison Sanitarium	Gen	14	6	Indiv	Yes	M D	1919
Michael Meagher Memorial Hospital ▲	Gen	50	35	Church	Yes[1]	R N	1916
St Louis Southwestern Hospital ▲	Indus	152	45	Indus	Yes[1]	R N	1887
Tucker 210—Jefferson							
Arkansas State Penitentiary Hospital -	Gen	25	10	State	No	M D	1916

Total registered hospitals in Arkansas 75 capacity 7 253 average census 5 457 Hospitals not admitted to the register 5 capacity [illegible]

CALIFORNIA City Pop—County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt M D R N Lay	Year Est
Agnew 316—Santa Clara							
Agnew State Hospital +	N&M	1 900	1 880	State	No	M D	1874
Ahwahnee — Madera							
Ahwahnee Tri County Tuberculosis Sanatorium	TB	110	[illegible]	County	No	Lay	1919
Alameda 32 400—Alameda							
Alameda Sanatorium on South Shore	Gen	100	49	Indep	Yes[1]	R N	1896
Albion 515—Mendocino							
Albion Lumber Company Hospital	Indus	8	2	Indus	No	M D	1909
Alcatraz, — San Francisco							
Station Hospital	Gen	34	17	Army	No	M D	1859
Alhambra 9 096—Los Angeles							
Alhambra Hospital	Gen	40		Indep	No	R N	1914
Alpine, 216—San Diego							
Alpine Sanatorium	TB	30	20	Indiv	No	M D	1919
Alturas 979—Modoc							
Modoc County Hospital[3]	Gen	10	5	County	No	M D	1884
Anaheim 5 526—Orange							
Anaheim Community Hosp	Gen	20	8	Indiv	No	R N	1923
Anaheim Sanitarium	Gen	33	18	Indep	No	R N	1910
Angel Island — Marin							
Station Hospital	Gen	33	8	Army	No	M D	1863
Arcata, 1 121—Humboldt							
Trinity Hospital	Gen	20	12	Church	No	R N	1888
Arlington 1 550—Riverside							
Riverside County Hospital	Gen	200	145	County	No	M D	1893
Arrowhead Springs — San Bernardino							
Arrowhead Springs	Conv	80	10	Indep	No	M D	1920
Artesia 500—Los Angeles							
Artesia Hospital	Gen	20	7	Indiv	No	Lay	1921
Auburn 2 376—Placer							
Macbeth Sanitarium[3]	Gen	15	10	Indiv	No	Lay	1923
Placer County Hospital	Gen	100	94	County	No	Lay	1856
Azusa 2 460—Los Angeles							
Children's Open Air Health Camp	TB	90	86	Indep	No	R N	1916
Bakersfield 25 600—Kern							
Bakersfield Emergency Hosp	Gen	40	10	Indiv	No	Lay	1920
Kern General Hospital	Gen	155	155	County	No	M D	1884
Mercy Hospital ▲	Gen	100	32	Church	Yes[1]	R N	1910
R B Rees Hospital	Gen	16	7	Indiv	No	R N	1916
Victory Hospital	Gen	12	6	Indiv	No	Lay	1918
Banning 1 810—Riverside							
Banning Hospital and Sanatorium	TB Gen	30	20	Indiv	No	M D	1900
Mary Henderson Sanitarium	TB	29	24	Indiv	No	Lay	1897
Southern Sierras Sanatorium	TB	34	28	Indiv	No	Lay	1912
Belmont, 563—San Mateo							
Alexander Sanitarium	N&M	50	32	Indep	No	G N	1915
California Sanatorium	TB	125	88	Indep	No	M D	1910
Chas S Howard Foundat	TB	20	13	Indep	No	M D	1923
Community Hospital of San Mateo County ▲	Gen	70	65	County	No	R N	1923
Nerve Rest Sanitarium	N&M	30	22	Indiv	No	Lay	1912
Twin Pines	N&M	20	10	Indep	No	M D	1923
Benicia 2 693—Solano							
Station Hospital	Gen	8	1	Army	No	M D	1849
Berkeley 67 800—Alameda							
Alta Bates Sanatorium	Gen	40	33	Indiv	Yes[1]	R N	1905
Berkeley General Hospital	Gen	90	65	Indep	No	M D	1905
California Schools for the Blind and Deaf	Gen	20	10	State	No	R N	1860
El Reposo Sanitarium and Hospital	Gen	45	34	Indep	No	R N	1907
University of California Infirmary ▲	Gen	52	18	State	No	M D	1906
Blythe, 1 622—Riverside							
Frank Luke Memorial Hosp	Gen	10	6	Indep	No	M D	1925
Brawley 5 392—Imperial							
Brawley Hospital	Gen	12	6	Part	No	Lay	1921
Burbank 400—Los Angeles							
Burbank Hospital	Gen	50	20	Indiv	No	M D	1905
Byron Hot Springs, 30—Contra Costa							
Byron Hot Springs Sanit	Conv	10	3	Indep	No	M D	1872
Carmel 638—Monterey							
Carmel Hospital	Gen	14	New	Indiv	No	R N	1927
Chico 8 872—Butte							
Enloe Hospital	Gen	30	20	Indiv	No	R N	1913
Chula Vista 1 718—San Diego							
McNabb Hospital and Sanit	Gen	40	25	Indep	No	M D	191
Clovis 1 157—Fresno							
McMurtry Sanitarium	Gen	11	6	Indiv	No	M D	19

CALIFORNIA—Cont.

City Pop —County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt M.D R N Lay	Year Est
Coalinga 2 931—Fresno							
San Joaquin Hospital	Gen	16	6	Indiv	No	G N	1910
Colfax 615—Placer							
Brown Convalescent Home	TB	18	14	Indiv	No	Lay	1923
Bushnell Sanatorium	TB	20	19	Indep	No	Lay	1921
Colfax Hospital	TB	52	45	Indiv	No	Lay	1908
Colfax School for the Tuberculous	TB	180	125	Indiv	No	M D	1908
Kathramon Sanatorium	TB	20	18	Part	No	Lay	1919
Standard Oil Company Sanatorium[3]	TB	22	18	Indus	No	M D	1921
Sunmount Camp and Preventorium	TB	19	15	Indep	No	R N	1918
Colusa 1 816—Colusa							
Colusa County Hospital	Gen	42	35	County	No	Lay	1877
Compton 1 478—Los Angeles							
Compton Sanitarium	N&M	165	108	Indep	No	M.D	1915
Las Campanas Hospital	Gen	30	New	Indep	No	M D	1927
Corona 3,540—Riverside							
Corona Hospital	Gen	8	3	Indiv	No	R N	1921
Coronado 3,289—San Diego							
Station Hospital	Gen	12	1	Army	No	M D	1913
Covina 1 652—Los Angeles							
Covina Hospital	Gen	25	19	Part	No	R N	1922
Crescent City 955—Del Norte							
Crescent City Hospital	Indus	7	4	Indus	No	R N	1910
Del Norte County Hospital	Gen	18	9	County	No	Lay	1890
Culver City 503—Los Angeles							
Culver City Hospital[3]	Gen	15	6	Indiv	No	M D	1922
Tapley Sanitarium	N&M	15	14	Indiv	No	Lay	1922
Decoto 519—Alameda							
Masonic Home Hospital	Gen	40	36	Frat	No	Lay	1911
Dinuba 3 400—Tulare							
Dinuba Sanitarium	Gen	14	7	Indiv	No	Lay	1911
Dorris 214—Siskiyou							
Dorris Hospital	Gen	20	5	Indiv	No	G N	1922
Downey 1 500—Los Angeles							
Downey Hospital	Gen	15	6	Indiv	No	R N	1923
Downieville 500—Sierra							
Sierra County Hospital	*Gen*	*16*	*8*	*County*	*No*	*Lay*	*1860*
Duarte 650—Los Angeles							
Elliott Rest Ranch	TB	25	18	Indiv	No	Lay	1927
Jewish Consumptive Relief Association Sanatorium	TB	136	131	Indep	No	M D	1913
Palm Grove Sanitarium	Conv	35	25	Part	No	Lay	1923
Dunsmuir 1 719—Siskiyou							
Dunsmuir Hospital and Sanitarium	Gen	20	11	Indep	No	M D	1910
El Centro 5 464—Imperial							
El Centro Hospital	Gen	45	20	Indep	No	Lay	1920
Eldridge 16—Sonoma							
Sonoma State Home	N&M	2 273	2 090	State	No	M D	1885
Eureka 13 600—Humboldt							
Humboldt County Hospital	Gen	141	125	County	No	Lay	1894
Humboldt County School for the Tuberculous	TB	57	50	County	No	Lay	1920
St Joseph Hospital	Gen	65	46	Church	Yes[1]	Lay	1920
Union Labor Hospital	Gen	50	25	Indep	No	Lay	1906
Ft Bragg 2 408—Mendocino							
Redwood Coast Hospital	Gen	25	15	Indep	No	M D	1887
Fowler 1 528—Fresno							
Fowler Sanitarium	Gen	6	4	Indiv	No	M D	
French Camp 218—San Joaquin							
San Joaquin General Hosp ▲	Gen	400	205	County	Yes[1]	M D	1899
Fresno 60 000—Fresno							
Burnett Sanitarium	Gen	125	81	Indep	Yes[1]	R N	1900
General Hospital of Fresno County ★▲	Gen	300	300	County	Yes[1]	M D	1903
Glen da Lough Maternity Hospital	Mater	8	4	Indiv	No	Lay	1917
Rosemary Sanitarium	N&M	25	14	Indiv	No	Lay	1926
Sample Sanitarium	Gen	23	18	Indiv	No	R N	1915
Fullerton 1 725—Orange							
Fullerton Hospital	Gen	25	12	Part	No	R N	1917
Gilroy 2 437—Santa Clara							
Gilroy Private Hospital	Gen	11	6	Part	No	R N	1900
Glendale 25 600—Los Angeles							
Arbor Rest Home Sanit	Conv	24	17	Indiv	No	Lay	1912
Glendale Sanitarium and Hospital ▲	Gen	247	163	Church	Yes[1]	M.D	1905
Windsor Hospital	Gen	45	20	Indiv	No	Lay	1913
Grass Valley 4 006—Nevada							
W C Jones Memorial Hosp	Gen	18	16	Indiv	No	R N	1907
Groveland 250—Tuolumne							
Hetch Hetchy Hospital[3]	Gen	35	5	Indus	No	M D	1918
Halcyon — San Luis Obispo							
Halcyon Sanatorium	Gen	12	5	Indiv	No	M D	1904
Hanford 4 829—Kings							
Hanford Sanitarium	Gen	28	15	Indep	No	R N	1908
Kings County Hospital	Gen	70	62	County	No	Lay	1894
Sacred Heart Hospital	Gen	25	12	Church	No	Lay	1914
Hawthorne 1 062—Los Angeles							
Hawthorne Hospital	Gen	9	5	Indiv	No	Lay	1924
Hayward 3 437—Alameda							
Hayward Central Hospital	Gen	16	10	Indiv	No	R N	1913
Healdsburg 2 011—Sonoma							
Healdsburg General Hosp	Gen	14	3	Indiv	No	R N	1921
Hermosa Beach 679—Los Angeles							
Hermosa Redondo Hospital	Gen	25	13	Indep	No	R.N	1922
Hilts 216—Siskiyou							
Hilts Hospital	Indus	7	2	Indus	No	M.D	1912
Hobart Mills 516—Nevada							
Hobart Estate Company Hospital	Indus	14	3	Indus	No	M D	1898
Hollister 2 308—San Benito							
Hazel Hawkins Memorial Hospital	Gen	15	6	County	No	R N	1907
San Benito County Hosp	Gen	35	18	County	No	Lay	1897
Hollywood — Los Angeles							
Benedict Maternity Hosp	Mater	23	10	Indiv	No	G N	1924
Hoopa 20—Humboldt							
Hoopa Valley Indian Hosp	Gen	21	12	Indian	No	Lay	1917
Huntington Park 4,513—Los Angeles							
Mission Hospital	Gen	20	11	Indiv	No	M D	1922
Imola —Napa							
Napa State Hospital	N&M	2 974	2 836	State	No	M.D	1875
Inglewood 1 536—Los Angeles							
Milton Hospital	Gen	14	12	Indiv	No	R.N	1925
Ione 806—Amador							
Preston School of Industry	Gen	41	25	State	No	Lay	1892
Keene 52—Kern							
Stoney Brook Retreat	TB	81	46	County	No	M D	1919
King City 1 048—Monterey							
The Hospital	Gen	7	4	Indiv	No	R N	1917
Kingsburg 1 316—Fresno							
Kingsburg Sanitarium	Gen	8	5	Indiv	No	M D	
La Crescenta 1 510—Los Angeles							
Kimball Sanitarium	Conv	18	9	Indiv	No	Lay	1923
La Jolla 1 525—San Diego							
Scripps Memorial Hospital ▲	Gen	50	19	Indep	No	R N	1916
Scripps Metabolic Clinic	Metab	25	5	Indep	No	M D	1924
Lamanda Park 250—Los Angeles							
Dr Keaster s Private Hosp	Gen	16	10	Indiv	No	M D	1921
La Vina — Los Angeles							
La Vina	TB	100	40	Indep	No	M D	1909
Lincoln 1 402—Placer							
Joslin s Sanatorium	N&M	15	12	Indiv	No	R N	1916
Livermore 1 916—Alameda							
Arroyo Sanatorium +	TB	190	190	County	No	M D	1918
Del Valle Preventorium	TB	50	47	County	No	Lay	1924
Judson Hospital	Gen	15	6	Indiv	No	R N	1924
Livermore Sanitarium +	N&M	90	79	Indep	No	M D	1892
St Paul s Hospital	Gen	12	New	Part	No	R N	1927
United States Veterans Hospital No 102 ▲	TB	302	223	VetBur	No	M D	1924
Lodi 4 850—San Joaquin							
Dr Buchanan s Sanitarium	Gen	15	5	Indiv	No	R N	1911
Mason Hospital	Gen	15	8	Part	No	R N	1915
Loma Linda — San Bernardino							
Loma Linda Sanitarium & Hospital ★▲	Gen	145	108	Church	Yes[1]	M.D	1905
Lompoc 1 876—Santa Barbara							
Celite Company Hospital	Indus	8	2	Indus	No	Lay	1918
Long Beach 97 700—Los Angeles							
Long Beach Community Hospital ▲	Gen	105	51	Indep	No	R.N	1921
St Mary s Long Beach Hospital ▲	Gen	60	40	Church	No	R N	1923
Seaside Hospital ★▲	Gen	150	145	Indep	Yes[1]	R N	1907
Los Angeles 576 673—Los Angeles							
Angelus Hospital ▲	Gen	120	75	Indep	No	Lay	1904
Banksia Place Sanitarium	N&M	18	12	Indiv	No	Lay	1909
Barlow Sanatorium	TB	86	78	Indep	Yes	M D	1902
Belvedere Sanitarium	TB	24	12	Indiv	No	Lay	1915
Bonnie Brae Maternity Home	Mater	9	4	Indiv	No	Lay	1921
Brentwood Sanitarium	Gen	15	10	Part	No	M.D	1922
California Lutheran Hospital ★▲	Gen	325	252	Church	Yes[1]	Lay	1898
Century Sanitarium	Conv	35	25	Part	No	Lay	1923
Chase Diet Sanitarium	Conv	25	16	Indiv	No	Lay	1917
Children s Hospital +▲	Chil	100	90	Indep	Yes	R.N	1901
Dunbar Hospital	Gen	18	9	Indiv	No	R.N	1923
Edwin Larson s Hospital & Clinic	Gen	15	5	Indiv	No	R.N	1923
Elysian Maternity Home	Mater	8	2	Indiv	No	Lay	1921
Eye and Ear Hospital of Los Angeles	EENT	10	7	Indep	No	M.D	1922
Fernwold Rest Home	Conv	12	4	Indiv	No	Lay	1921
Florence Crittenton Home	Mater	5	3	Indiv	No	Lay	1892
Golden State Hospital +▲	Indus	75	55	Part	No	M D	1920
Goodyear Tire and Rubber Company s Hospital	Indus	10	4	Indus	No	M.D	1920
Hollywood Clara Barton Memorial Hospital ★▲	Gen	300	128	Indep	Yes[1]	M D	1924
Hospital of the Good Samaritan ▲	Gen	381	105	Church	Yes[1]	R.N	1887
Kaspare Cohn Hospital ▲	Gen	55	49	Church	No	R.N	1904
Lincoln Hospital	Gen	24	20	Indep	No	R.N	1903
Los Angeles County General Hospital ★+▲	Gen	1 243	1 203	County	Yes[1]	M D	1878
Los Angeles Lying In Hosp	Mater	21	10	Indep	No	Lay	1925
Los Angeles Maternity Cot	Mater	28	18	Indep	Yes	Lay	1907
Los Angeles Orphans Home Society	Chil	16	4	Indep	No	Lay	1886
Los Angeles Receiving Hosp	Gen	19	6	City	No	M D	1885
Los Angeles Sanitarium	Gen	20	15	Indiv	No	M D	1912
Los Angeles Smallpox Quarantine Hospital	Iso	90	2	City	No	Lay	1868
Los Angeles Tonsil and Adenoid Hospital	EENT	8	2	Part	No	M D	1925
Methodist Hosp of Southern California ★▲	Gen	225	145	Church	Yes[1]	M D	1909
Miles Maternity Hospital[3]	Mater	6	5	Indiv	No	Lay	
New French Hospital ▲	Gen	75	41	Frat	No	Lay	*1860*
Orthopaedic Hosp School ▲	Ortho	75	75	Indep	No	R N	1918
Pacific Hospital	Gen	64	5	Indep	Yes[1]	R N	1908
Pahl Hospital	Gen	15	8	Indiv	No	R N	1925
Private Home Hospital	Mater	9	6	Indiv	No	R.N	1917
Queen of Angels Hospital	Gen	115	100	Church	Yes	Lay	1926
Resthaven	Conv	40	30	Indep	No	R.N	1912
Rice s Maternity Hospital	Mater	14	12	Indiv	No	Lay	1921
Roosevelt Hospital	Gen	75	55	Indep	No	Lay	1924
Ruth Sanitarium	Mater	12	10	Indep	No	Lay	
St Vincent s Hospital ★▲	Gen	109	85	Church	Yes[1]	R.N	1856
Salvation Army Truelove Home	Mater	16	7	Church	No	R N	1899
Santa Fe Coast Lines Hospital ★▲	Indus	147	130	Indus	No	M D	1905
Southern California Japanese Hospital	Gen	37	22	Indep	No	R.N	1918

CALIFORNIA—Cont City, Pop—County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt M D R N Lay	Year Est
Southwest General Hospital	Gen	25	12	Indiv	No	R N	1925
Terry Sanitarium Hospital	Gen	11	7	Indep	No	M D	1916
Volunteers of America Maud B Booth Home[2]	Chil	12	4	Church	No	Lay	1906
White Memorial Hosp ★+▲	Gen	108	64	Church	Yes[1]	M D	1917
Wilshire Rest Home and Sanitarium	Conv	18	12	Part	No	R N	1921
Los Banos 1 276—Merced							
Los Banos Hospital	Gen	20	13	Indiv	No	R N	1926
Los Gatos 2 317—Santa Clara							
Oaks Sanitarium	TB	70	50	Indep	No	M D	1910
Sutton's	Conv	15	10	Indiv	No	Lay	1925
Loyalton 442—Sierra							
Sierra Valley Hospital	Gen	10	4	Indiv	No	M.D	1917
Madera 3 444—Madera							
Madera County Hospital	Gen	40	32	County	No	R.N	1893
Madera Sanitarium	Gen	19	11	Indiv	No	R N	1920
Manor —Marin							
Arequipa Sanatorium	TB	42	40	Indep	No	R N	1910
Bothin Convalescent Home for Women and Children	Conv	75	45	Indep	No	R N	1905
Mare Island 410—Solano							
United States Naval Hospital ★▲	Gen	629	508	Navy	No	M D	1854
Martinez 2 115—Contra Costa							
Contra Costa County Hosp	Gen	140	98	County	No	Lay	1880
Marysville 6 461—Yuba							
Rideout Memorial Hospital	Gen	35	18	Indiv	No	R N	1908
Yuba County Hospital	Gen	78	52	County	No	Lay	1860
McCloud 200—Siskiyou							
McCloud Hospital	Indus	32	10	Indus	No	M.D	1900
Menlo Park 1 323—San Mateo							
Children's Convalescent Home	Conv	24	8	Indiv	No	R.N	1926
Merced 3 974—Merced							
Merced County Hospital	Gen	120	115	County	No	Lay	
Mercy Hospital	Gen	25	16	Part	No	R.N	1923
Merced Falls 50—Merced							
Yosemite Hospital	Indus	14	5	Indus	No	M D	1912
Modesto 9 241—Stanislaus							
McPheeter's Hospital	Gen	30	25	Indiv	No	R N	1910
Robertson Hospital	Gen	32	25	Indiv	No	R N	1919
St Mary's Hospital	Gen	22	10	Church	No	R N	1920
Stanislaus County Hospital	Gen	140	105	County	No	Lay	1869
Monrovia 5 480—Los Angeles							
Barton Sanatorium	TB	13	9	Indiv	No	R N	1927
Monrovia Sanatorium	TB	16	15	Indiv	No	R.N	1915
Norumbega Heights Sanat	TB	18	13	Indiv	No	Lay	1926
Pottenger Sanatorium for Diseases of the Lungs and *Throat* +	TB	136	120	Indep	No	M D	1903
Monterey 5 479—Monterey							
El Adobe Hospital	Gen	14	10	Indiv	No	R.N	1922
Monterey Peninsula Hosp	Gen	18	11	Indiv	No	R N	1918
Station Hospital	Gen	60	25	Army	No	M D	1902
Montrose 45—Los Angeles							
Dr Utley's Hospital-Sanitarium[3]	Gen	25	18	Indiv	No	M D	1923
Mountain View 1 161—Santa Clara							
Mountain View Hospital and Sanitarium	Gen	11	2	Indiv	No	M D	1921
Napa 6 757—Napa							
Francis Hospital and Sanatorium	Gen	20	10	Part	No	M D	1919
Napa General Hospital	Gen	12	5	Indiv	No	M D	1911
National City 1 733—San Diego							
Elwyn Sanitarium	Gen	10	5	Part	No	R N	1913
Paradise Valley Sanitarium and Hospital ▲	Gen	120	73	Church	Yes[1]	M D	1904
Nevada City 1 782—Nevada							
Nevada City Sanitarium	Gen	8	4	Indiv	No	Lay	1910
Nevada County Hospital	Gen	80	64	County	No	R N	1865
Newman 1 051—Stanislaus							
Newman Hospital	Gen	12	6	Indiv	No	M D	1920
Newport Beach 894—Orange							
Newport Beach Hospital	Gen	5	New	Part	No	M.D	1927
Northwestern 116—Mendocino							
Northwestern Redwood Company Hospital	Indus	9	4	Indus	No	M.D	1893
Norwalk 1 517—Los Angeles							
Norwalk State Hospital	N&M	1 577	1,390	State	No	M.D.	1915
Oakland 260 500—Alameda							
Alameda County Receiving Hospital	Gen	10	5	County	No	Lay	
Anderson's Sanatorium	N&M	20	15	Indiv	No	Lay	1916
Baby Hospital +▲	Chil	35	30	Indep	Yes	R N	1913
Fabiola Hospital ★▲	Gen	162	150	Indep	Yes[1]	Lay	1876
Fred Finch Orphanage[2]	Chil	12	4	Church	No	Lay	1891
German Old People's Home	Gen	12	5	Indep	No	Lay	1892
Highland Hospital of Alameda County ★▲	Gen	350	262	County	Yes[1]	M D	1926
Inez Sanitarium	Conv	10	4	Indiv	No	Lay	1911
King's Daughters of California Home for Incurables	Incur	190	109	Church	No	Lay	1897
Oakland Central Hospital	Gen	60	45	Indiv	No	R N	1904
Oakland Maternity Hosp	Mater	14	9	Indep	No	R N	1910
Providence Hospital ▲	Gen	212	114	Church	Yes[1]	R N	1903
St Anthony's Hospital	Gen	70	40	Indiv	No	M D	1905
Salvation Army Women's Home & Maternity Hosp	Mater	35	8	Church	No	Lay	
Samuel Merritt Hospital ★▲	Gen	118	99	Indep	Yes[1]	Lay	1905
West Oakland Home	Chil	12	5	Indep	No	Lay	1887
Olive View —Los Angeles							
Olive View Sanatorium	TB	629	500	County	No	M.D	1920
Orange 2,920—Orange							
Orange County Hospital ★▲	Gen	125	125	County	Yes[1]	M D	1914
Oxnard 200—Ventura							
St John's Hospital	Gen	38	30	Church	No	R N	1912
Pacific Grove 2 974—Monterey							
Glenwood Sanitarium	Mater	11	6	Indiv	No	Lay	1926
Palms 150—Los Angeles							
St Erne Sanitarium	Conv	40	30	Indiv	No	Lay	1925
Palm Springs 1 500—Riverside							
Las Solanitas	TB	25	16	Indiv	No	M D	1920
Palo Alto 5 900—Santa Clara							
Palo Alto Hospital	Gen	35	22	City	No	R N	1908
United States Veterans Hospital No 24▲	N&M	1 010	1 010	VetBur	No	M D	1919
Paradise 90—Butte							
Paradise Sanatorium	TB	16	6	Indiv	No	M D	1924
Pasadena 58 400—Los Angeles							
City of Pasadena Isolation Hospital	Iso	12	1	City	No	M D	1923
El Nido Pasadena Preventorium	Gen	40	38	Indep	No	R N	1924
Las Encinas	Gen	65	45	Indep	No	M.D	1901
Pasadena Hospital ★▲	Gen	200	150	Indep	Yes[1]	Lay	1892
Woman's Hospital	Mater	12	7	Indep	No	R N	1923
Paso Robles 1 919—San Luis Obispo							
Fisher Hospital	Gen	8	5	Indiv	No	M.D	1925
Patton 215—San Bernardino							
Patton State Hospital +	N&M	2 749	2 658	State	No	M D	1893
Petaluma 6 226—Sonoma							
Petaluma General Hospital	Gen	24	8	Part	No	R N	1906
Placerville 1 914—Eldorado							
El Dorado County Hospital	Gen	50	34	County	No	M D	1860
Placerville Sanatorium	Gen	22	10	Indiv	No	M D	1904
Point Loma 117—San Diego							
United States Army Station Hospital	Gen	12	2	Army	No	M.D	1903
Pomona 15 700—Los Angeles							
Pomona Valley Community Hospital	Gen	35	29	Indep	Yes[1]	R N	1904
Porterville 4 097—Tulare							
Mt Whitney Hospital	Gen	8	4	Indiv	No	R N	1907
Porterville Hospital and Maternity Home	Gen	12	5	Indiv	No	R.N	1913
Portola 100—Plumas							
Western Pacific Railway Hospital	Indus	45	25	Indus	No	M D	1912
Quincy 519—Plumas							
Plumas Industrial Hospital	Indus	6	3	Indiv	No	M D	1923
Randsburg 1 000—Kern							
Rand District Hospital	Gen	10	6	Indiv	No	M D	1922
Red Bluff 3 530—Tehama							
St Elizabeth's Mercy Hosp	Gen	20	11	Church	No	Lay	1908
Tehama County Hospital	Gen	65	40	County	No	M.D	1856
Redding 2 912—Shasta							
St Caroline Sanitarium	Gen	22	12	Indep	No	M D	1906
Shasta County Hospital	Gen	90	65	County	No	Lay	1900
Redlands 9 571—San Bernardino							
Redland Heights Sanat	Gen	25	15	Part	No	R N	1917
Weger Health School	Conv	28	21	Indiv	No	M D	1924
Redwood City 2 442—San Mateo							
Canyon Sanatorium	TB	75	61	Indiv	No	R N	1916
Drexler Hall	Ortho	14	12	Indiv	No	Lay	1916
Represa 30—Sacramento							
California State Prison Hospital[2]	Gen	25	38	State	No	M D	1879
Richmond 23 600—Contra Costa							
Cottage Hospital	Gen	29	12	Indiv	No	R N	1918
Grande Vista Sanatorium	N&M	20	10	Indiv	No	M D	1915
Richmond Maternity Hosp	Mater	14	5	Indiv	No	G N	1924
Riverside 21 254—Riverside							
Riverside Community Hosp	Gen	70	32	Indep	Yes	M D	1901
Sherman Institute (Indian Hospital)	Gen	60	20	Indian	No	Lay	1905
Rosemead — Los Angeles							
Alhambra Sanatorium	N&M	14	4	Indep	No	M D	1924
Ross 550—Marin							
Ross General Hospital	Gen	50	22	Indep	No	Lay	1910
Sacramento 73 400—Sacramento							
Alhambra Hospital	Gen	12	8	Indiv	No	Lay	1910
Emergency Hosp & Disp	Gen	12	4	City	No	M D	1885
Mater Misericordiae Hosp +▲	Gen	124	80	Church	Yes[1]	Lay	1895
Sacramento Hospital ★▲	Gen	416	295	County	Yes[1]	M D	1848
Southern Pacific Emergency Hospital	Indus	29	10	Indus	No	M D	1870
Sutter Hospital ▲	Gen	175	96	Indep	No	Lay	1923
Salinas 3 730—Monterey							
Monterey County Hospital and Farm	Gen	68	45	County	No	Lay	1886
Murphy Hospital	Gen	25	12	Indiv	No	R N	1907
Salinas Valley Hospital	Gen	25	16	Indiv	No	R N	1922
San Bernardino 25 600—San Bernardino							
Ramona Hospital ▲	Gen	52	25	Indep	No	R N	1910
San Bernardino County Hospital ★▲	Gen	240	180	County	Yes[1]	M D	1880
San Diego 110 400—San Diego							
Burlingame Hospital[2]	Gen	13	7	Indiv	No	M D	1918
Fraser Convalescent Home	Conv	17	8	Indiv	No	R N	1921
McCulloch Hospital	Gen	35	22	Indep	No	R N	1918
Mercy Hospital ▲	Gen	235	119	Church	Yes[1]	Lay	1890
Mission Valley Hospital	Vener	36	12	City	No	M D	1918
San Diego County General Hospital ★▲	Gen	518	300	County	Yes[1]	M D	1905
San Diego Municipal Isolation Hospital	Iso	50	14	City	No	M D	1907
Sunshine General Hospital[2]	Gen	14	8	Indiv	No	R N	1914
United States Naval Hospital ★▲	Gen	900	681	Navy	No	M D	1919
San Fernando 1 000—Los Angeles							
Independent Order of Foresters California Tubercular Sanitarium	TB	34	15	Frat	No	Lay	1913
San Fernando Hospital	Gen	12	8	Part	No	R N	1922
United States Veteran's Hospital No 104▲	TB	230	200	VetBur	No	M D	1926
San Francisco 566 800—San Francisco							
Chinese Hospital	Gen	66	21	Indep	No	Lay	1925
Dante Sanatorium	Gen	54	42	Indep	No	Lay	1900

CALIFORNIA—Cont

City, Pop —County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt M D R N Lay	Year Est
Franklin Hospital ★	Gen	232	170	Frat	Yes[1]	M D	1854
French Hospital ★	Gen	225	144	Frat	Yes[1]	Lay	1851
Hahnemann Hospital of the Univ of California ★▲	Gen	120(a)	68	State	Yes	M D	1887
Hebrew Home for Aged Disabled [2] [3]	Gen	35	20	Indep	No	Lay	1889
Hospital for Children ★+▲	Gen	245	163	Indep	Yes[1]	M D	1875
Laguna Honda Home -	Gen	500	472	Cy&Co	No	Lay	1854
Lane Hospital Stanford Univ Medical School ★+▲	Gen	185	125	Indep	Yes	M D	1893
Letterman General Hosp★▲	Gen	1 500	720	Army	No	M D	1898
Mary s Help Hospital ★+▲	Gen	130	100	Church	Yes[1]	R.N	1912
Molony Urological Hospital	Gen	10	6	Indiv	No	M D	1920
Mt Zion Hospital ★+▲	Gen	150	135	Indep	Yes[1]	Lay	1887
Park Sanitarium	N&M	38	25	Indep	No	R N	1917
Park West Hydro and Sanatorium	N&M	25	17	Indiv	No	Lay	1919
*Physicians and Surgeons In*stitute of Physio Therapy	Gen	25	15	Indiv	No	Lay	1918
St Elizabeth s Infant Hosp	Mater	50	20	Church	No	R N	1921
St Francis Hospital +▲	Gen	300	270	Indep	Yes[1]	M D	1904
St Joseph s Hospital ★▲	Gen	200	144	Church	Yes[1]	R N	1889
St Luke's Hospital ★+▲	Gen	203	146	Church	Yes[1]	M D	1871
St Mary s Hospital ★+▲	Gen	300	200	Church	Yes[1]	Lay	1856
San *Francisco Emergency* Hospital Service	Gen	92	50	Cy&Co	No	M D	1895
San Francisco Home for Incurables	Incur	61	55	Indep	No	R N	1907
San Francisco Hospital ★+▲	Gen	1 161	771	Cy&Co	Yes[1]	M D	1872
San *Francisco Polyclinic &* Post Graduate College	Gen	13	9	Indep	No	Lay	1889
Shriners Hospital for Crippled Children +▲	Ortho	50	55	Frat	No	R N	1923
Southern Pacific General Hospital ★▲	Indus	300	275	Indus	No	M D	1867
Stanford University Hospital ★+▲	Gen	133	99	Indep	Yes[1]	M D	1917
Union Plant Hospital	Indus	24	11	Indus	No	M D	1907
United States Marine Hospital No 19 ★▲	Gen	320	277	USPHS	No	M D	1849
University of California Hospital ★+▲	Gen	283	160	State	Yes[1]	M D	1907
Wakefield Hospital	Gen	42	20	Indep	No	R N	1908
Sanitarium 25—Napa							
St Helena Sanitarium and Hospital +▲	Gen	140	77	Church	Yes[1]	M D	1878
San Jacinto 945—Riverside							
Soboba Indian Hospital	Gen	30	22	Indian	No	M D	1923
San Jose 44 230—Santa Clara							
Alum Rock Sanatorium	TB	29	18	Indep	No	M D	1921
Japanese Hospital	Gen	8	5	Indiv	No	M D	1900
O Connor Sanitarium ▲	Gen	100	65	Church	Yes[1]	R N	1889
San Jose Hospital ▲	Gen	125	67	Indep	Yes[1]	Lay	1923
Santa Clara County Hosp	Gen	350	270	County	Yes[1]	M D	1856
Sunnyholme Preventorium	TB	18	14	County	No	M D	1923
San Leandro 5 903—Alameda							
Fairmont Hospital of Alameda County ▲	Gen	350	285	County	No	Lay	1863
San Luis Obispo 5 895—San Luis Obispo							
Mountain View Hospital	Gen	18	12	Part	No	R N	1907
San Luis Obispo General Hospital	Gen	50		County	No	M D	1873
San Luis Sanitarium	Gen	20	15	Part	Yes[1]	R N	1911
San Mateo 5 779—San Mateo							
Mills Memorial Hospital ▲	Gen	63	41	Church	No	M D	1908
San Mateo Preventorium	TB	12	12	Indep	No	R N	1921
San Pedro 3 500—Los Angeles							
San Pedro General Hosp ▲	Gen	66	31	Indep	No	R.N	1925
Station Hospital	Gen	25	12	Army	No	M D	1916
United States Ship Relief ▲	Gen	515	120	Navy	No	M D	1920
San Rafael 5 512—Marin							
Marin County Tuberculosis Hospital	TB	14	6	County	No	M D	1914
San Rafael Cottage Hosp	Gen	40	18	Indiv	No	Lay	1904
Santa *Ana 20 600—Orange*							
Santa Ana Valley Hospital	Gen	60	33	Indep	No	R N	1902
Santa Barbara 24 800—Santa Barbara							
St Francis Hospital ★▲	Gen	85(a)	35	Church	Yes[1]	R.N	1908
Santa Barbara Cottage Hospital ★▲	Gen	110	91	Indep	Yes[1]	Lay	1888
Santa Barbara General Hospital ▲	Gen	175	150	County	No	Lay	1870
Santa Clara 5 220—Santa Clara							
Woman s Relief Corps Home of California	Gen	12	10	State	No	Lay	1887
Santa Cruz 10 917—Santa Cruz							
Hanley Hospital	Gen	32	12	Indiv	No	R N	1904
Santa Cruz County Hosp	Gen	24	10	County	No	Lay	1880
Seabright Sanitarium	Gen	15	10	Part	No	Lay	1910
Santa Monica 20 200—Los Angeles							
Loamshier Hospital	Gen	31	18	Part	No	Lay	1913
St Catherines Hospital and Annex	Gen	35	15	Indiv	No	R.N	1911
Santa Monica Hospital	Gen	51	35	Indep	No	M D	1926
Santa Monica Sanitarium [3]	Gen	30	20	Indiv	No	Lay	1919
Santa Rosa 7 817—Sonoma							
General Hospital	Gen	40	14	Indiv	No	R N	1916
Mary Jesse Hospital	Gen	19	9	Indiv	No	Lay	1908
Sonoma County Hospital	Gen	68	60	County	No	M D	1883
Saratoga 519—Santa Clara							
Odd Fellows Home of California -	Gen	41	22	Frat	No	M D	1895
Sawtelle 5 031—Los Angeles							
National Soldiers Home Hospital ▲	Gen	862	727	Fed	No	M D	1888
Scotia 1 500—Humboldt							
Scotia Hospital	Indus	42	15	Indus	No	M D	1907
Selma 3 158—Fresno							
Selma Sanitarium	Gen	15	7	Indep	No	R.N	1922
Sierra Madre 2,026—Los Angeles							
Sierra Madre Hospital	Gen	15	6	Indiv	No	M D	1920
Sonora 2,029—Tuolumne							
Sonora Hospital	Gen	17	7	Part	No	R N	1906
Tuolumne County Hospital	Gen	80	39	County	No	M D	1896
Southgate 57—Los Angeles							
Suburban Hospital	Gen	40	20	Indep	No	R N	1925
South Pasadena 7 648—Los Angeles							
Pasadena Sanitarium	N&M	100	63	Indiv	No	M D	1906
South San Francisco 1 989—San Mateo							
South San Francisco Hosp	Gen	36	21	Indep	No	M D	1918
Springville — Tulare							
Tulare Kings County Joint Tubercular Hospital	TB	100	80	County	No	Lay	1919
Standard 813—Tuolumne							
Pickering Hospital	Indus	25	10	Indus	No	M D	1925
Stanford University 700—Santa Clara							
Stanford Convalescent Home	Conv	40	39	Indep	No	R N	1919
Stockton 48 600—San Joaquin							
Clark s Sanatorium	N&M	50	45	Part	No	Lay	1871
Dameron Hospital	Gen	70	50	Indep	Yes[1]	M D	1912
St Joseph s Home & Hosp	Gen	125	75	Church	Yes[1]	Lay	1899
Stockton City Emergency Hospital	Gen	9	5	City	No	M D	1905
Stockton General Hospital	Gen	30	6	Indep	No	R N	1917
Stockton State Hospital	N&M	3 112	3 062	State	No	M D	1851
Sugar Pine 60—Madera							
Sugar Pine Hospital	Indus	17	5	Indus	No	M D	1903
Suisun City 769—Solano							
Solano County Hospital [3]	Gen	72	48	County	No	Lay	
Susanville 918—Lassen							
Riverside Hospital	Gen	25	10	Indiv	No	R N	1920
Talmage 29—Mendocino							
Mendocino State Hospital	N&M	1 265	1 160	State	No	M D	1893
Torrance, 4 010—Los Angeles							
Jared Sidney Torrance Memorial Hospital	Gen	30	22	City	No	R N	1925
Tulare 3 539—Tulare							
Tulare Hospital	Gen	14	6	Indiv	No	Lay	1907
Turlock 1 573—Stanislaus							
Emanuel Hospital	Gen	40	20	Church	Yes[1]	R.N	1917
Lillian Collins Hospital	Gen	15	6	Indiv	No	M D	1923
Ukiah 2 136—Mendocino							
Mendocino County Hosp [3]	Gen	75	65	County	No	M D	1883
Ukiah General Hospital	Gen	15	7	Indiv	No	R N	1927
Upland 2,902—San Bernardino							
San Antonio Community Hospital	Gen	40	24	Indep	No	R N	1907
Ventura 2 945—Ventura							
Big Sisters Hospital	Gen	30	22	Indep	No	R N	1901
Ventura County Hospital	Gen	100	65	County	No	Lay	1875
Ventura School for Girls [2]	Gen	43	7	State	Yes	M D	1916
Veteran s Home — Napa							
Veteran's Home Hospital	Gen	200	145	State	No	M D	1883
Vineburg 164—Sonoma							
Burndale Hospital	Gen	15	9	Indiv	No	R N	1924
Visalia 5 753—Tulare							
Tulare County Hospital	Gen	38	18	County	No	Lay	1870
Kaweah Hospital	Gen	30	15	Indep	No	R N	1920
Watsonville 4 446—Santa Cruz							
Watsonville Hospital	Gen	25	12	Indiv	No	M D	1900
Weaverville 1 100—Trinity							
Trinity County Hospital	Gen	32	14	County	No	Lay	1865
Weed 400—Siskiyou							
Weed Hospital	Indus	30	14	Indus	No	M D	1904
Weimar 32—Placer							
Weimar Joint Sanatorium	TB	344	300	County	No	M D	1919
Westwood 4 356—Lassen							
Westwood Hospital	Indu	100	50	Indus	No	M D	1913
Whittier 7 997—Los Angeles							
Whittier State School -	Gen	14	10	State	No	Lay	1891
Willows 1 139—Glenn							
Glenn County Hospital	Gen	30	20	County	No	Lay	1898
Woodland 3 187—Yolo							
Woodland Clinic Hospital ▲	Gen	100	44	Indep	No	Lay	1911
Yolo County Hospital	Gen	60	48	County	No	Lay	1860
Yosemite National Park 200—Mariposa							
Yosemite National Park Hospital	Gen	14	3	Fed	No	M D	1914
Yreka 1 134—Siskiyou							
Siskiyou County General Hospital	Gen	90	70	County	No	M D	1850
Yuba City 1 160—Sutter							
Sutter County Hospital	Gen	45	36	County	No	Lay	1917

Total registered hospitals in California 421 capacity 49 844 average census 38 634 Hospitals not admitted to the register 70 capacity 1 373

COLORADO

City Pop —County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt M D R.N Lay	Year Est
Alamosa 317—Alamosa							
Alamosa Hospital	Gen	20	8	Indiv	No	M D	1914
Aspen 1 265—Pitkin							
Citizens Hospital	Gen	15	8	Indep	No	R N	1890
Boulder 12 000—Boulder							
Boulder Colorado Sanit ★▲	Gen	100	75	Church	Yes[1]	M D	1896
Boulder County Hospital	Gen	20	15	County	No	Lay	1919
Community Hospital ▲	Gen	65	20	Indep	No	Lay	1898
Mesa Vista Sanatorium	TB	26	13	Indiv	No	R.N	1919
Breckenridge, 796—Summit							
Summit County Hospital	Gen	8	4	County	No	Lay	
Brush 2,103—Morgan							
Eben Ezer Hospital	Gen	24	15	Church	No	Lay	1903
Burlington 368—Kit Carson							
Burlington Hospital	Gen	10	4	Indiv	No	M D	1919

COLORADO—Cont City Pop—County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt M D R N Lay	Year Est
Canon City 4 551—Fremont							
Colorado State Penitentiary Hospital	Gen	28	22	State	No	M D	1878
Dr Craves Private Hosp	Gen	35	15	Part	No	M D	1900
Holmes Hospital	Gen	30	12	Indiv	No	R N	1909
Colorado Springs 30 105—El Paso							
Beth El General Hospital ▲	Gen	85	60	Church	Yes[1]	Lay	1911
Colorado School for Deaf & Blind	Gen	28	6	State	No	Lay	1874
Colorado Springs Psychopathic Hospital	N&M	51	45	Part	No	M D	1923
Cragmor Sanatorium	TB	125	110	Indep	No	Lay	1902
Crestone Heights Sanit	Gen	25	9	Indiv	No	M D	1922
Glockner Sanatorium and Hospital ▲	Gen	210	175	Church	Yes[1]	Lay	1889
Idlewold Sanatorium	TB	10	9	Part	No	R N	1912
La Verne Sanatorium	TB	56	45	Indiv	No	Lay	1919
Myron Stratton Home	Gen	25	16	Indep	No	Lay	1912
National Methodist Episcopal Sanatorium for Tuberculosis ▲	TB	51	71	Church	Yes	Lay	1925
Observation Hospital	Iso	55	11	Cy&Co	No	Lay	
St Francis Hospital ★▲	Gen	138	75	Church	Yes[1]	R N	1887
Sunnyrest Sanatorium	TB	34	25	Indep	No	Lay	1911
Union Printers Home and Tuberculosis Sanatorium ✚	TB	188	120	Indep	No	Lay	1892
Cortez 565—Montezuma							
Johnson Hospital	Gen	12	6	Indiv	No	M D	1917
Cripple Creek 2 325—Teller							
Cripple Creek Hospital	Gen	25	5	Indep	No	Lay	1898
Teller County Hospital	Gen	28	15	County	No	M D	1902
Del Norte 840—Rio Grande							
St Joseph's Sanitarium	Gen	20	7	Church	No	Lay	1907
Delta 2 623—Delta							
Western Slope Memorial Hospital	Gen	13	7	Indep	No	Lay	1920
Denver 285 400—Denver							
Agnes Memorial Sanatorium	TB	157	134	Indep	No	M D	1902
Bethesda Sanatorium	TB	68	48	Church	No	M D	1914
Beth Israel Hospital ▲	Gen	55	25	Church	No	M D	1923
Children's Hospital ★▲	Chil	115	93	Indep	Yes[1]	R N	1908
Church Home for Convalescents	Conv	23	12	Church	No	Lay	1914
Colorado General Hosp ★✚▲	Gen	160	126	State	Yes[1]	M D	1924
Colorado Psychopathic Hospital ✚	N&M	80	68	State	Yes	M D	1924
Cottage Home	Mater	15	4	Indep	No	Lay	1885
Denver General Hospital ★▲	Gen	500	375	Cy&Co	Yes[1]	Lay	1860
Denver Orphans Home	Chil	30	8	Indep	No	Lay	1880
Denver National Home for Jewish Children	Chil	9	2	Indep	No	Lay	1908
Ex Patient Tubercular Home	TB	82	80	Indep	No	M D	1908
Fitz Hugh Sanitarium	N&M	20	10	Indiv	No	M D	1907
Fitzsimons General Hosp ★▲	Gen	1 848	1 047	Army	No	M D	1918
Florence Crittenton Home	Mater	30	10	Indep	No	R N	1896
Good Samaritan Sanitarium	Conv	26	18	Indiv	No	Lay	1918
Jean Bart Hospital	TB	18	12	Indiv	No	Lay	1921
Junior League Preventorium for Undernourished Children	Chil	16	16	Indep	No	Lay	1923
Mercy Hospital ★▲	Gen	160	130	Church	Yes[1]	R N	1900
Mt Airy Sanitarium	N&M	45	35	Indep	No	M D	1903
National Jewish Hospital for Consumptives ✚	TB	260	232	Indep	No	M D	1899
Oakes Home	TB	150	100	Church	No	Lay	1894
Park Avenue Hospital	Gen	50	30	Indep	Yes[1]	R N	1895
Presbyterian Hospital	Gen	146	91	Church	Yes	Lay	1926
St Anthony's Hospital ★▲	Gen	200	145	Church	Yes[1]	Lay	1892
St Clara Orphanage[3]	Chil	30	2	Church	No	Lay	
St Joseph's Hospital ★▲	Gen	225	134	Church	Yes[1]	Lay	1873
St Luke's Hospital ★✚▲	Gen	211	155	Church	Yes[1]	Lay	1881
Steele Memorial Hospital	Iso	75	30	Cy&Co	No	R N	1893
U S Grant Hospital	Gen	20	15	Part	No	R N	1921
Woman's Hospital of Denver[3]	Gen	58	26	Indiv	No	R N	1921
Durango 4 116—La Plata							
Mercy Hospital	Gen	35	20	Church	Yes	R N	1884
East Portal 300—Gilpin							
East Portal Hospital	Indus	8	3	Indus	No	M D	1924
Englewood 4 356—Arapahoe							
Walkery Sanitarium	N&M	14	12	Indiv	No	Lay	1901
Swedish National Sanatorium for Tuberculosis	TB	63	61	Indep	No	Lay	1909
Fairplay 183—Park							
Park County Hospital	Gen	15	10	County	No	M D	1890
Florence 2 679—Fremont							
Florence Community Hosp	Gen	16	5	Indiv	No	Lay	1927
Ft Logan 1 625—Arapahoe							
Station Hospital	Gen	25	10	Army	No	M D	1885
Ft Lyon 26—Bent							
United States Veterans Hospital No 80 ▲	TB	500	248	VetBur	No	M D	1907
Ft Morgan 3 818—Morgan							
Ft Morgan Hospital	Gen	25	8	Indep	No	R N	1923
Fruita 1,303—Mesa							
Fruita Community Hosp	Gen	12	10	Indep	No	R N	
Gilman 210—Eagle							
Empire Zinc Company Hosp	Indus	7	1	Indus	No	R N	1917
Glenwood Springs 2 073—Garfield							
Glenwood Springs Sanit	Gen	24	12	Indep	No	R N	1906
Golden 2 484—Jefferson							
State Industrial School for Boys Hospital	Gen	28	4	State	No	Lay	1881
Grand Junction 8 665—Mesa							
St Mary's Hospital ▲	Gen	67	35	Church	Yes[1]	Lay	1895
State Home & Training Sch for Mental Defectives	N&M	260	250	State	No	M D	1920
Greeley 12 500—Weld							
Greeley Hospital	Gen	60	27	County	Yes[1]	R N	1904
Weld County Hospital	Gen	66	30	County	Yes[1]	R N	1904
Haxtun 1 118—Phillips							
Haxtun Sanatorium[3]	Gen	10	5	Indiv	No	R N	1919
Hayden 455—Routt							
Solandt Memorial Hospital	Gen	10	3	Indep	No	R N	1923
Holyoke 1 205—Phillips							
Holyoke Hospital	Gen	10	6	Indiv	No	M D	1918
Homelake —Rio Grande							
Colorado State Soldiers & Sailors Home	Gen	45	25	State	No	Lay	1891
La Junta 4 154—Otero							
A T & S F R R Hosp ▲	Indus	36	21	Indus	No	M D	1884
City Hospital	Gen	25	18	Church	Yes[1]	Lay	1906
Mennonite Sanitarium	TB	25	18	Church	Yes[1]	Lay	1908
Lamar 2,512—Prowers							
Lamar Hospital	Gen	15	10	Cy&Co	No	R N	1919
South East Colorado Hosp	Gen	14	8	Indep	No	R N	1923
La Veta 737—Huerfano							
La Veta Hospital	Gen	6	2	Indiv	No	M D	1919
Leadville 4 959—Lake							
St Vincent's Hospital	Gen	25	12	Church	No	Lay	1880
Longmont 4 253—Boulder							
Longmont Hospital	Gen	35	11	Indep	Yes[1]	R N	1906
St Vrain Hospital	Gen	8	5	Indiv	No	Lay	1908
Loveland 3 651—Larimer							
Loveland Hospital	Gen	20	6	Indep	No	R N	1898
Manitou 1 099—El Paso							
Montcalm Sanatorium	Conv	50	35	Church	No	Lay	1890
Monte Vista 2,484—Rio Grande							
San Luis Valley Hospital	Gen	15	6	Indep	No	R N	1910
Montrose 3 581—Montrose							
Montrose Hospital	Gen	20	12	Indiv	No	R N	1921
St Luke's Hospital	Gen	20	12	Indiv	No	Lay	1910
Mt Morrison 195—Jefferson							
State Industrial School for Girls	Gen	10	2	State	No	Lay	1895
Oak Creek 967—Routt							
Oak Creek Hospital	Gen	10	4	Indiv	No	M D	1914
Ouray 1 165—Ouray							
Bates Hospital	Gen	25	7	Indep	No	M D	1884
Pueblo 43 900—Pueblo							
City Contagious Hospital	Iso	10	4	City	No	M D	1918
Colorado State Hospital	N&M	2 600	2 563	State	No	M D	1879
Minnequa Hospital ▲	Indus	255	148	Indus	Yes[2]	M D	1880
Parkview Hospital ▲	Gen	86	60	Indep	Yes	R N	1923
St Mary Hospital ▲	Gen	150	83	Church	Yes[1]	Lay	1882
Woodcroft Hospital	N&M	100	98	Indep	No	M D	1890
Ridge —Jefferson							
State Home & Training Sch for Mental Defectives	N&M	80	75	State	No	M D	1909
Rocky Ford 3 746—Otero							
Physicians Hospital	Gen	12	8	Part	No	M D	1916
Salida 4 689—Chaffee							
Denver & Rio Grande Western Railroad Hospital ▲	Indus	81	40	Indus	No	R N	1883
Red Cross Hospital	Gen	50	24	Indiv	Yes[1]	Lay	1901
Sanatorium —Jefferson							
Sanatorium of the Jewish Consumptives Relief Society ✚	TB	300	300	Indep	No	M D	1904
Seibert 311—Kit Carson							
Seibert Hospital	Gen	5	2	Indiv	No	Lay	1923
Silverton 1 150—San Juan							
Silverton Miners Union Hospital	Indus	20	5	Indep	No	Lay	1909
Steamboat Springs 1 249—Routt							
Steamboat Springs Hospital	Gen	10	6	Indiv	No	M D	1913
Sterling 6 415—Logan							
Sterling Hospital[3]	Gen	25	16	Indep	No		1921
Telluride 1 618—San Miguel							
Telluride Hospital	Gen	28	16	Indiv	No	R N	1896
Towaoc 60—Montezuma							
Ute Mountain Indian Hosp	Gen	24	12	Indian	No	M D	1921
Trinidad 11 000—Las Animas							
Mt San Rafael Hospital ▲	Gen	75	40	Church	Yes[1]	Lay	1889
Victor 1 777—Teller							
District Hospital	Gen	24	7	Indep	No	R N	1903
Walsenburg 2 423—Huerfano							
Lamme Brothers Hospital	Gen	20	10	Part	No	M D	1919
Wheat Ridge 1 030—Jefferson							
Evangelical Lutheran Sanit	TB	100	76	Church	No	Lay	1905
Windsor 935—Weld							
Bartz Memorial Hospital	Gen	10	3	Indiv	No	M D	1916
Windsor Hospital	Gen	14	4	Indiv	No	M D	1909
Woodmen —El Paso							
Modern Woodmen of America Sanatorium	TB	250	235	Frat	No	Lay	1909

Total registered hospitals in Colorado 121 capacity 12 417 average census 8 957 Hospitals not admitted to the register 11 capacity 338

CONNECTICUT City Pop—County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt M D R N Lay	Year Est.
Bridgeport 143 555—Fairfield							
Bridgeport Hospital ★▲	Gen	237	195	Indep	Yes[1]	M D	1877
Englewood Hospital	Iso	125	59	City	No	R N	1918
Hillside Home and Hospital	N&M	204	160	City	No	Lay	1914
Park City Hospital[3]	Gen	45	15	Indep	Yes	R N	1921
Park City Sanitarium	Gen	8	6	Indiv	No	Lay	1921
St Vincent's Hospital ★▲	Gen	212	120	Church	Yes[1]	Lay	1903
Bristol 25 400—Hartford							
Bristol Hospital	Gen	84	38	Indep	No	R N	1922
Cheshire 2 855—New Haven							
Connecticut Reformatory *	Gen	27	6	State	No	Lay	1913
Cromwell 2 188—Middlesex							
Cromwell Hall	Conv	35	32	Indiv	No	M D	1877
Danbury 18 943—Fairfield							
Danbury Hospital ▲	Gen	105	69	Indep	Yes[1]	R N	1886

CONNECTICUT—Cont City Pop—County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt M D R N Lay	Year Est
Derby 12 700—New Haven							
Griffin Hospital ▲	Gen	78	47	Indep	Yes[1]	R N	1901
Essex 2 745—Middlesex							
Leonard Home and Sanit	Conv	12	8	Indiv	No	R N	1923
Granby 615—Hartford							
Dr Pendleton s Sanitarium	Gen	26	19	Indep	No	M D	1922
Greens Farms 200—Fairfield							
Dr McFarland s Hall Brooke Sanitarium	N&M	100	90	Indiv	No	M D	1898
Greenwich 25 900—Fairfield							
Blythewood Sanitarium	N&M	64	59	Indep	No	Lay	1905
Bowman s Sanatorium	N&M	20	11	Indiv	No	M D	1898
Crest View Sanatorium	N&M	22	16	Indiv	No	M D	1892
Greenwich Hospital ▲	Gen	97	56	Indep	Yes[1]	R N	1903
Municipal Hospital	Iso	35	9	City	No	R N	1920
Guilford 3 001—New Haven							
Guilford Sanatorium	Conv	15	6	Indep	No	R N	1901
Hartford 164 200—Hartford							
Cedarcrest (Hartford State Tuberculosis Sanatorium)+	TB	200	126	State	No	M D	1910
Charter Oak Private Hosp	N&M	14	9	Indep	Yes	R N	1908
Hartford Hospital ★▲	Gen	563	451	Indep	Yes[1]	M D	1854
Hartford Isolation Hospital	Iso	75	26	City	No	M D	1914
Hartford Retreat +	N&M	200	155	Indep	Yes	M D	1822
Mt Sinai Hospital ▲	Gen	65	53	Indep	Yes[1]	R N	1922
Municipal Hospital ★▲	Gen	110	93	City	Yes	Lay	1905
Niles Street Private Hosp	Gen	22	11	Indiv	No	R N	1912
St Agnes Home	Mater	12	6	Church	No	Lay	1914
St Francis Hospital ★▲	Gen	480	303	Church	Yes[1]	Lay	1897
Wildwood Sanatorium	TB	50	36	Indep	No	M D	1902
Mansfield Depot 306—Tolland							
Mansfield State Training School and Hospital	Epil	650	647	State	No	M D	1917
Meriden 36 600—New Haven							
Connecticut Sch for Boys	Gen	12	2	State	No	Lay	1851
Meriden Hospital ▲	Gen	90	70	Indep	Yes[1]	R N	1885
Meriden State Tuberculosis Sanatorium +	TB	208	180	State	No	M D	1910
Middletown 23 100—Middlesex							
Connecticut State Hospital	N&M	2 910	3 003	State	Yes[1]	M D	1866
Long Lane Farm	Gen	8	3	State	No	Lay	1867
Middlesex Hospital ★▲	Gen	125	79	Indep	Yes[1]	R N	1895
Milford 14 100—New Haven							
Milford Hospital	Gen	25	10	Indep	No	Lay	1921
Mystic 6 621—New London							
Mystic Oral School for the Deaf [6]	Gen	6	2	State	No	Lay	1869
New Britain 69 600—Hartford							
New Britain Gen Hosp ★▲	Gen	191	126	Indep	Yes[1]	M D	1893
New Haven 181 900—New Haven							
Children s Community Center of the New Haven Orphan Asylum [2]	Chil	10	4	Indep	No	Lay	1833
Grace Hospital ★▲	Gen	244	152	Indep	Yes[1]	Lay	1889
Hospital of St Raphael ★▲	Gen	200	179	Church	Yes[1]	Lay	1907
Jewish Home for the Aged	Gen	30	20	Indep	No	Lay	1915
New Haven Hospital ★+▲	Gen	378	258	Indep	Yes[1]	Lay	1826
Springside Almshouse	Gen	50	40	City	No	Lay	1888
Whitney Avenue Hospital	Gen	14	8	Indiv	No	R N	[illegible]
Yale Infirmary	Gen	35	5	Indep	No	R N	1892
Newington 2 381—Hartford							
Newington Home for Crippled Children	Ortho	60	60	Indep	No	R N	1898
New London 29 700—New London							
Connecticut College Infirm	Gen	15	4	Indep	No	M D	1918
Home Memorial Hospital ▲	Gen	50	26	Indep	Yes[1]	R N	1920
Lawrence and Memorial Associated Hospitals ▲	Gen	146	85	Indep	Yes[1]	R N	1910
Dr Lena s Hospital	Gen	17	15	Indiv	No	M D	1920
New Milford 4 781—Litchfield							
New Milford Hospital	Gen	35	17	Indep	No	R N	1921
Niantic 1 697—New London							
Connecticut State Farm for Women	Gen	12	5	State	No	Lay	1918
The Seaside	TB	59	57	State	No	M D	1919
Noroton Heights 700—Fairfield							
Soldiers Hospital of Connecticut	Gen	120	65	State	No	M D	1864
Norwalk 30 100—Fairfield							
Norwalk General Hospital ▲	Gen	76	64	Indep	Yes[1]	Lay	1893
Norwich 23 300—New London							
Norwich State Hospital	N&M	2 161	2 003	State	Yes	M D	1903
Norwich State Tuberculosis Sanatorium	TB	222	177	State	No	M D	1913
William W Backus Hosp ▲	Gen	155	63	Indep	Yes[1]	R N	1891
Putnam 7 711—Windham							
Day Kimball Hospital of Windham County	Gen	43	38	County	No	R N	1892
Rockville 7 726—Tolland							
Rockville City Hospital	Gen	17	11	Indep	No	R N	1921
Sharon 1 585—Litchfield							
Sharon Hospital	Gen	20	11	Indep	No	R N	1910
Shelton 10 530—Fairfield							
Laurel Heights Sanatorium	TB	175	164	State	No	M D	1910
South Manchester 8 036—Hartford							
Manchester Memorial Hospital ▲	Gen	65	42	Indep	No	R N	1920
South Norwalk 8 968—Fairfield							
Dr Wadsworth s Sanitarium	Conv	35	25	Indiv	No	M D	1903
Stafford Springs 3 059—Tolland							
Cyril and Julia C Johnson Memorial Hospital	Gen	35	22	Indep	No	R N	1912
Stamford 41 800—Fairfield							
Dr Barnes' Sanitarium	Conv	85	65	Indiv	No	M D	1898
The Orchards	N&M	20	18	Indep	No	M D	1920
Stamford Hall	N&M	250	225	Indep	No	M D	1891
Stamford Hospital ★▲	Gen	213	120	Indep	Yes[1]	R N	1892
Stratford 16 164—Fairfield							
Sunnyside Sanitarium	Conv	16	7	Indiv	No	R N	1924
Thompsonville 5 900—Hartford							
Dr Vail s Sanatorium	N&M	20	10	Indiv	No	M D	1890
Torrington 25 100—Litchfield							
Charlotte Hungerford Hospital ▲	Gen	70	47	Indep	No	R N	1916
Wallingford 12 010—New Haven							
Gaylord Farm Sanatorium +	TB	135	127	Indep	No	M D	1904
Waterbury 91 715—New Haven							
Brookside Home [2]	Gen	50	45	City	No	Lay	
St Mary s Hospital ★▲	Gen	183	131	Church	Yes[1]	R N	1908
Waterbury Convalescent Home	Conv	18	8	Indiv	No	R N	1925
Waterbury Hospital ★▲	Gen	185	140	Indep	Yes[1]	Lay	1883
West Hartford 10 312—Hartford							
American School for the Deaf	Gen	18	4	Indep	No	Lay	
Prospect Hospital	Gen	20	22	Indep	No	Lay	1921
West Haven 12 400—New Haven							
West Haven Surgical and Maternity Hospital	Gen	16	10	Indiv	No	Lay	1905
William Wirt Winchester Hospital	TB	50	New	Indep	No	Lay	1927
Westport 4 259—Fairfield							
Westport Sanitarium	N&M	100	90	Indep	No	M D	1891
Weathersfield 4 342—Hartford							
Connecticut State Prison Hospital [6]	Gen	24	10	State	No	Lay	1848
Willimantic 13 100—Windham							
St Joseph s Hospital ▲	Gen	42	37	Church	Yes[1]	Lay	1908
Wilton 1 284—Fairfield							
St Elizabeth s House	Incur	30	25	Church	No	Lay	1895
Winsted 8 248—Litchfield							
Litchfield County Hospital of Winchester	Gen	70	38	Indep	Yes[1]	R N	1901
Woodmont 220—New Haven							
Peck Sanatorium	Conv	12	6	Indep	No	R N	1908

Total registered hospitals in Connecticut 91 capacity, 13 705 average census 11 208 Hospitals not admitted to the register 2 capacity, 40

DELAWARE

City Pop—County	Type of Service	Bed	Aver Pts	Control	Nu Tr Sch	Supt M D R N Lay	Year Est
Dover 4 042—Kent							
Kent General Hospital	Gen	59	New	Indep	No	R N	1927
Farnhurst 332—New Castle							
Delaware State Hospital at Farnhurst	N&M	625	592	State	Yes	M D	1889
Ft Dupont —New Castle							
Station Hospital	Gen	28	9	Army	No	M D	1898
Green Bank —New Castle							
New Castle County Workhouse	Gen	5	3	County	No	Lay	1902
Lewes 2 074—Sussex							
Beebe Hospital of Lewes ▲	Gen	56	20	Indep	Yes[1]	M D	1921
Marshallton 630—New Castle							
Brandywine Sanatorium	TB	75	45	State	No	M D	1897
Edgewood Sanitarium	TB	30	18	State	No	R N	1909
Sunnybrook Cottage	Conv	20	20	Indep	No	Lay	1919
Milford 2 753—Sussex							
Marshall Hospital	Gen	22	12	Part	No	R N	1922
Milford Emergency Hosp	Gen	35	16	Indep	Yes	R N	1921
Stockley 138—Sussex							
Delaware Colony for Mental Defectives	N&M	180	108	State	No	Lay	1921
Wilmington 124 200—New Castle							
Delaware Hospital ★▲	Gen	175	119	Indep	Yes[1]	R N	1889
Homeopathic Hospital ▲	Gen	85	50	Indep	Yes[1]	Lay	1888
Dr J J Jones Private Hospital [3]	Gen	30	13	Indiv	No	M D	1896
Physicians and Surgeons Hospital ▲	Gen	55	38	Indep	Yes[1]	R N	1909
St Francis Hospital	Gen	65	40	Church	Yes[1]	R N	1924

Total registered hospitals in Delaware 16 capacity 1 525 average census 1 103 Hospital not admitted to the register 0 capacity 0

DISTRICT OF COLUMBIA

City Pop—County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt M D R N Lay	Year Est
Washington 528 000							
Carson s Private Hospital	Gen	15	12	Indiv	No	M D	1919
Central Dispensary & Emergency Hospital ★▲	Gen	160	145	Indep	Yes[1]	Lay	1871
Chevy Chase Sanatorium	N&M	23	19	Indiv	No	M D	1914
Children s Health Camp	TB	55	45	Indep	No	R N	
Children s Hospital of the District of Columbia +▲	Chil	165	101	Indep	Yes[1]	R N	1870
Columbia Hosp for Women and Lying In Asylum +▲	Mater	126	90	Fed	No	M D	1866
Curtis Private Surgical Sanitarium	Gen	16	4	Part	No	M D	1925
Dowling s Private Eye Hospital	Eye	6	4	Indiv	No	M D	1923
Eastern Dispensary and Casualty Hospital	Gen	50	25	Indep	Yes	M D	1888
Episcopal Eye Ear and Throat Hospital ▲	EENT	94	46	Church	No	M D	1897
Florence Crittenton Home	Mater	12	6	Indep	No	Lay	1895
Freedmen s Hospital ★▲	Gen	260	209	Fed	Yes[1]	M D	1855
Gallinger Municipal Hosp ★	Gen	345	257	City	Yes[1]	M D	1859
Garfield Memorial Hosp ★▲	Gen	278	149	Fed	Yes[1]	M D	1882
Georgetown University Hospital ★▲	Gen	189	125	Indep	Yes[1]	Lay	1898
George Washington University Hospital ★▲	Gen	100(a)	59	Indep	Yes[1]	Lay	1898
Home for the Aged and Infirm [6]	Gen	26	26	State	No	Lay	1905
Kendall House Sanitarium	Conv	22	15	Indiv	No	R N	1918

DISTRICT OF COLUMBIA—Cont

City Pop—County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt MD RN Lay	Year Est
National Homeopathic Hospital	Gen	55	43	Indep	Yes[1]	RN	1881
National Training School for Boys Hospital	Gen	40	10	Fed	No	Lay	1872
Providence Hospital ★▲	Gen	310	191	Church	Yes[1]	Lay	1860
St Ann's Infant Asylum	Chil	14	12	Church	No	Lay	1860
St Elizabeth's Hospital ★+	N&M	4 100	4 057	VetBur	Yes[1]	MD	1855
St John's Orphanage [2]	Chil	24	14	Church	No	RN	1870
Sibley Memorial Hospital ★▲	Gen	225	200	Church	Yes[1]	Lay	1895
Smallpox Hospital	Iso	41	12	State	No	MD	1896
Stanton Park Hospital	Gen	[illegible]	5	Indep	No	MD	1924
Tuberculosis Hospital of the Dist of Columbia	TB	180	131	State	No	MD	1908
United States Naval Hospital ★▲	Gen	471	166	Navy	No	MD	1908
United States Soldiers Home Hospital	Gen	500	358	Army	No	MD	1876
United States Veterans Hospital No 32▲	Gen	214	156	VetBur	No	MD	1919
Walter Reed General Hospital ★+▲	Gen	1 200	929	Army	Yes[1]	MD	1909
Washington Eye Ear Nose and Throat Hospital	EENT	10	5	Indep	No	Lay	1913
Washington Home for Incurables	Incur	100	96	Indep	No	MD	1889
Washington (D C) Sanitarium and Hospital ★▲	Gen	180	91	Indep	Yes[1]	MD	1907
Washington Sanitarium Mission Hospital	ENT	14	1	Indiv	No	MD	1914

Total registered hospitals in District of Columbia 36 capacity 9 685 average census 7,751 Hospitals not admitted to the register 1 capacity, 25

FLORIDA

City Pop—County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt MD RN Lay	Year Est
Arcadia 3,479—De Soto							
Arcadia General Hospital	Gen	30	15	Indep	Yes[1]	RN	1920
Bartow 4,503—Polk							
Polk County Hospital	Gen	30	13	County	No	MD	1926
Bradenton 7 306—Manatee							
Christine Roof Memorial Hospital	Gen	25	15	Indiv	No	RN	1926
Brooksville, 1 745—Hernando							
Hernando General Hospital	Gen	12	1	Indep	No	RN	1926
Century 1 000—Escambia							
Century Hospital	Gen	21	10	Indiv	Yes	Lay	1903
Chattahoochee —Gadsden							
Florida State Hospital	N&M	2 800	2 599	State	Yes[1]	MD	1876
Clearwater 2,427—Pinellas							
Morton F Plant Endowed Hospital	Gen	35	17	Indep	No	RN	1915
Dade City 1 776—Pasco							
Dr Jackson's Hospital	Gen	12	4	Indiv	No	RN	1924
Daytona Beach 25 000—Volusia							
Dr Bohannon's Hospital & Sanitarium	Gen	25	12	Indiv	No	MD	1910
Daytona Private Hospital and Sanitarium	Gen	10	10	Indiv	No	MD	1907
Halifax District Hospital	Gen	125	New	Indep	No	RN	1928
McLeod Hospital	Gen	[illegible]	9	County	No	MD	1912
Deland 3 324—Volusia							
Deland Memorial Hospital	Gen	23	2	Indep	No	RN	1915
Ft Barrancas —Escambia							
Station Hospital	Gen	30	11	Army	Yes	MD	1892
Ft Lauderdale 1 000—Broward							
Memorial Hospital	Gen	37	20	Indiv	No	MD	1923
Ft Myers 3 678—Lee							
Lee Memorial Hospital	Gen	30	14	Indep	No	RN	1916
Gainesville 8 466—Alachua							
Florida Farm Colony for Epileptic & Feebleminded	N&M	350	330	State	No	MD	1919
Homestead 1 307—Dade							
Post Graduate Hospital	Gen	15	3	Indiv	No	RN	
Jacksonville, 127 100—Duval							
Brewster Hospital	Gen	22	20	Church	Yes[1]	RN	1900
Duval County Hospital ★▲	Gen	175	110	County	No	Lay	1880
Riverside Hospital ▲	Gen	35	25	Indep	Yes[1]	Lay	1910
Rollins Hospital of Obstetrics	Mater	8	4	Indiv	No	MD	1929
St Luke's Hospital ▲	Gen	175	105	Indep	Yes[1]	Lay	1873
St Vincent's Hospital ▲	Gen	200	53	Church	Yes[1]	Lay	1906
Kendall 25—Dade							
Dade County Hospital	Gen	50	38	County	No	RN	1917
Key West 13 301—Monroe							
United States Marine Hospital No 10▲	Gen	40	23	USPHS	No	MD	1840
Lake City 3 341—Columbia							
Lake Shore Hospital	Gen	25	15	Indep	No	MD	1917
United States Veterans Hospital No 63▲	Gen	255	200	VetBur	No	MD	1920
Lakeland 7 062—Polk							
Colored Emergency Hospital	Gen	20	7	City	Yes	MD	1926
Morrell Memorial Hospital	Gen	110	60	City	Yes[1]	MD	1918
Lake Wales 2 747—Polk							
Lake Wales Sanitarium	Gen	10	4	Indiv	No	Lay	1927
Marianna 1 915—Jackson							
Baltzell Hospital	Gen	20	6	Indiv	No	RN	1922
Miami 1[illegible]100—Dade							
Christian Hospital	Gen	22	5	Indep	No	RN	1921
James M Jackson Memorial Hospital ▲	Gen	200	220	City	Yes[1]	MD	1911
Miami Retreat	Conv	24	New	Indiv	No	Lay	1927
New Gowdy Hospital	Gen	23	16	Indiv	No	MD	1920
Victoria Hospital	Gen	50	2	Indep	No	RN	1921
Woodard Hall Hospital	Gen	20	New	Part	No	RN	1927
Miami Beach 644—Dade							
Allison Hospital ▲	Gen	100	31	Church	No	RN	1925
Ocala 4 370—Marion							
Florida Industrial School for Girls [2]	Gen	30	1	State	No	RN	1917
Monroe Memorial Hospital	Gen	88	60	Cy&Co	Yes[1]	Lay	1907
Orange Park 372—Clay							
Moosehaven [2]	Gen	12	8	Frat	No	MD	1922
Orlando 9 237—Orange							
Florida Sanitarium and Benevolent Association +	Gen	135	62	Church	Yes[1]	MD	1908
Orange General Hospital	Gen	150	89	Indep	Yes[1]	Lay	1916
Palatka 6 102—Putnam							
Mary Lawson Sanatorium	Gen	18	6	Indiv	No	Lay	1923
Parkview Hospital	Gen	25	10	Indiv	No	MD	1924
Pensacola 25 300—Escambia							
Pensacola Hospital ▲	Gen	100	45	Church	Yes[1]	RN	1915
United States Naval Hosp	Gen	190	35	Navy	No	MD	1875
Pierce 205—Polk							
Pierce Hospital	Indus	8	3	Indus	No	RN	1923
Quincy 2 540—Gadsden							
Gadsden County Hospital	Gen	22	12	Indep	Yes	RN	1919
Raiford 412—Union							
Florida State Farm Hosp	Gen	85	60	State	No	MD	1914
Safety Harbor 429—Pinellas							
Espiritu Santo Springs Sanitarium	Gen	56	15	Indep	No	Lay	1924
St Augustine 6 102—St John							
East Coast Hospital ▲	Indus	100	85	Indus	Yes[1]	RN	1890
Flagler Hospital ▲	Gen	81	41	Indep	Yes[1]	MD	1899
St Petersburg 45 800—Pinellas							
American Legion Hospital for Crippled Children	Ortho	18	New	Indep	No	Lay	1927
Faith Hospital ▲	Gen	50	22	Indep	Yes[1]	Lay	1921
Mercy Hospital	Gen	12	6	City	No	RN	1916
Mound Park Hospital	Gen	78	59	City	Yes[1]	RN	1913
Sanford 5 588—Seminole							
Fernald Laughton Memorial Hospital	Gen	20	10	City	No	RN	1919
Sarasota 810—Sarasota							
Halton Hospital	Gen	10	5	Indiv	No	MD	1922
Sarasota Hospital	Gen	55	20	City	Yes	RN	1924
Sebring 1,841—Highlands							
Mitchell's Hospital	Gen	8	3	Indiv	No	MD	1924
Dr Weems Hospital	Gen	9	5	Indiv	No	MD	1926
Stuart 1 154—Martin							
St Lucie Sanitarium	Gen	14	5	Indep	No	Lay	1926
Tallahassee 5 637—Leon							
Florida Agricultural & Mechanical College Sanat	Gen	25	10	State	Yes	MD	1911
Johnston's Hospital	Gen	18	7	Indiv	No	RN	1921
Tampa 102,200—Hillsborough							
Centro Espanol Sanatorium	Gen	40	8	Frat	No	MD	1904
Children's Home	Chil	9	3	Cy&Co	No	Lay	
Children's Hosp of Tampa	Chil	25	10	Indep	No	RN	1925
Clara Frye Hospital	Gen	55	18	Indiv	Yes	RN	1907
Dr H M Cook's Sanat	Gen	38	25	Indiv	No	Lay	1921
Oaklawn Sanitarium	N&M	14		Indiv	No	MD	1923
Tampa Municipal Hosp ★▲	Gen	173	140	City	Yes[1]	MD	1927
Tampa Sanitarium	Gen	10	2	Indiv	No	MD	1909
Venezuela Small Hospital	Gen	30	7	Indiv	No	RN	1926
Titusville 2,081—Brevard							
Titusville Hospital	Gen	12	4	Indiv	No	MD	1926
West Palm Beach 8 659—Palm Beach							
Good Samaritan Hospital ▲	Gen	120	53	Indep	Yes[1]	MD	1916
Pine Ridge Hospital	Gen	40	25	Indep	No	MD	1916

Total registered hospitals in Florida 79 capacity 7 711 average census 5 642 Hospitals not admitted to the register 9 capacity 210

GEORGIA

City Pop—County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt MD RN Lay	Year Est.
Adel 1 729—Cook							
Adel Hospital	Gen	10	4	Part	No	MD	1915
Albany 13,800—Dougherty							
Phoebe Putney Mem Hosp ▲	Gen	40	20	Indep	Yes[1]	RN	1911
Alto 168—Habersham							
State Tuberculosis Sanat	TB	210	101	State	No	MD	1910
Americus 9 010—Sumter							
Americus and Sumter County Hospital	Gen	30	18	Cy&Co	Yes[1]	RN	1911
Americus Colored Hospital	Gen	25	10	Indiv	No	Lay	1923
Athens 16 400—Clarke							
Athens General Hospital ▲	Gen	72	48	County	Yes[1]	RN	1921
Fairhaven Tuberculosis Sanitarium	TB	26	12	County	No	RN	1926
St Mary's Hospital	Gen	25	20	Indep	Yes[1]	RN	1906
Atlanta 200 616—Fulton							
Atlanta Hospital	Gen	30	25	Indiv	Yes[1]	RN	1907
Battle Hill Sanatorium	TB	240	170	Cy&Co	Yes	MD	1910
Blackman Health Resort	Gen	70	45	Indep	No	MD	1879
Dr Brawner's Sanitarium	N&M	42	25	Indiv	Yes	MD	1910
Confederate Soldiers Home [3]	Gen	34	13	State	No	Lay	1901
Contagious Disease Hospital	Iso	0	10	City	No	MD	1904
Davis Fischer Sanatorium ★▲	Gen	150	80	Indep	Yes[1]	RN	1908
Florence Crittenton Home	Mater	10	4	Indep	No	Lay	1897
Georgia Baptist Hospital ★▲	Gen	130	100	Church	Yes[1]	Lay	1903
Grady Memorial Hospital ★▲	Gen	500	350	City	Yes[1]	Lay	1891
Home for Incurables	Incur	45	42	Indep	No	Lay	1901
MacVicar Hospital of Spelman College [2]	Gen	45	22	Indep	Yes[1]	RN	1886
Mercy Hospital	Gen	30	20	Indiv	No	MD	
Dr Noble's Private Infirm	Gen	25	15	Indiv	Yes	RN	1896
Piedmont Hospital ★▲	Gen	115	80	Indep	Yes[1]	Lay	1905
St Joseph's Infirmary ★▲	Gen	125	80	Church	Yes[1]	Lay	1881
St Mary's Hospital	Mater	20	12	Indiv	No	Lay	1905

GEORGIA—Cont

City Pop—County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt M D R N Lay	Year Est
Southeastern Sanatorium [3]	Conv	40	25	Part	No	M D	1926
Station Hospital	Gen	100	40	Army	No	M D	1883
United States Penitentiary Hospital	Gen	90	55	Fed	No	M D	1900
United States Veterans Hospital No 48 ▲	Gen	85	80	VetBur	No	M D	1920
Augusta 55 700—Richmond							
Bruce Hospital	Gen	25	2	Indiv	Yes	M D	1923
Dr Burdashaw's Eye Ear Nose and Throat Private Hospital	EENT	10	New	Indiv	No	M D	1927
Margaret Wright Hospital	Gen	20	14	Part	Yes[1]	M D	1908
United States Veterans Hospital No 62 +▲	N&M	574	570	VetBur	No	M D	1920
University Hospital ★+▲	Gen	246	182	City	Yes[1]	M D	1914
Wilhenford Hospital for Women and Children ▲	Gen	50	22	Indep	Yes[1]	R N	1910
Bainbridge 4 792—Decatur							
Bainbridge Hospital	Gen	32	22	Indiv	No	M D	1915
Riverside Hospital	Gen	25	18	Indep	Yes	R N	1917
Barwick 381—Brooks							
Sanchez Private Sanitarium	Gen	12	3	Indiv	No	Lay	1920
Brookhaven — De Kalb							
Brookhaven Manor	Conv	11	6	Indiv	No	Lay	1925
Brunswick 17 200—Glynn							
Brunswick City Hospital	Gen	35	10	City	Yes[1]	M D	1904
Cairo 1 908—Grady							
Walker Hospital	Gen	20	12	Indep	Yes	M D	1914
Canton 2 679—Cherokee							
Coker's Hospital	Gen	23	9	Part	Yes[1]	M D	1923
Cartersville 4 350—Bartow							
Dr Lowry's Emergency Hos	Gen	6	2	Indiv	No	M D	1926
Cave Spring 738—Floyd							
Georgia School for Deaf	Gen	20	4	State	No	Lay	1846
Cedartown 4 053—Polk							
Cedartown Hospital	Gen	8	3	Indiv	No	M D	1926
Hall Chaudron Hospital	Gen	8	4	Part	Yes[1]	R N	1924
Columbus 45 000—Muscogee							
Columbus City Hospital ▲	Gen	125	64	Cy&Co	Yes[1]	Lay	1915
Cordele 6 538—Crisp							
Cordele Sanatorium	Gen	15	5	Indep	Yes	Lay	1905
Cuthbert 3 022—Randolph							
Patterson Hospital	Gen	22	14	Part	Yes[1]	M D	1920
Dalton 5 222—Whitfield							
Hamilton Memorial Hosp	Gen	36	9	Indep	Yes[1]	R N	1920
Decatur 6 150—DeKalb							
Georgia Sanitarium	Gen	12	5	Indiv	No	M D	1923
Scottish Rite Hospital for Crippled Children ▲	Ortho	64	60	Frat	No	R N	1915
Donalsonville 747—Seminole							
Chason's Hospital	Gen	40	8	Indep	Yes	M D	1919
Douglas 3 401—Coffee							
Clark and Smith Sanitarium	Gen	14	8	Part	Yes[1]	Lay	1922
Dublin 7 707—Laurens							
Claxton Montford Hospital	Gen	25	New	Part	Yes	R N	1927
Dublin Clinic	Gen	40	18	Indep	Yes[1]	M D	1924
Eastman 2 707—Dodge							
Murrell Hospital	Gen	12	4	Indiv	No	Lay	1926
Emory University — DeKalb							
Wesley Memorial Hosp ★+▲	Gen	300	197	Church	Yes[1]	M D	1905
Fitzgerald 6 870—Ben Hill							
Fitzgerald Hospital	Gen	35	15	Indep	Yes[1]	M D	1920
Ft Benning — Chattahooche							
Station Hospital	Gen	193	125	Army	No	M D	1918
Ft Oglethorpe 740—Catoosa							
Station Hospital	Gen	78	25	Army	No	M D	1864
Ft Screven 17—Chatham							
Station Hospital	Gen	30	13	Army	No	M D	1899
Gainesville 6 272—Hall							
Downey Hospital ▲	Gen	46	20	Indep	Yes[1]	R N	1909
Griffin 8 240—Spalding							
Griffin Hospital	Gen	40	30	Cy&Co	Yes[1]	R N	1903
Hazlehurst 1 383—Jeff Davis							
Dr John M Hall's Sanit [3]	Mater	18	10	Indiv	No	M D	1909
Jesup 1 415—Wayne							
Drs Colvin and Ritch Sanit	Gen	21	12	Part	Yes[1]	Lay	1924
LaFayette 2 104—Walker							
LaFayette Sanitarium	Gen	12	New	Part	No	M D	1927
LaGrange 24 700—Troup							
Dunson Hospital	Gen	50	25	City	Yes[1]	Lay	1910
Macon 59 200—Bibb							
Hopewell Sanatorium	TB	30	22	County	No	Lay	1926
Lundy Hospital	Gen	30	25	Indiv	No	M D	1920
Macon Hospital ★▲	Gen	145	97	City	Yes[1]	M D	1896
Middle Georgia Sanatorium	Gen	50	21	Indep	Yes[1]	R N	1911
Oglethorpe Private Infirm	Gen	38	14	Indep	Yes[1]	R N	1920
Pumpelly Massenburg Sanat	Gen	25	18	Indep	No	Lay	1921
Marietta 6 190—Cobb							
Nolan Sanitarium	Gen	15	3	Indiv	No	G N	1909
Milledgeville 4 619—Baldwin							
Allen's Invalid Home	N&M	120	100	Indiv	No	M D	1890
City Hospital	Gen	16	6	Indep	No	R N	1919
Georgia State Penitentiary General Hospital	Gen	60	40	State	No	Lay	1898
Georgia State Penitentiary Tubercular Hospital	TB	60	60	State	No	M D	1910
Georgia State Sanitarium	N&M	5 000	4 782	State	Yes[1]	M D	1842
Millen 2 030—Jenkins							
Millen Hospital	Gen	20	7	Indiv	No	M D	1918
Mulkey Hospital	Gen	10	7	Indiv	No	M D	1923
Moultrie 6,739—Colquitt							
Daniel Private Sanitarium	Gen	9	4	Indiv	No	M.D	1916
Edmonson Brannen Hosp	Gen	12	4	Part	No	M D	1921
Newnan 7 037—Coweta							
N Curtis King Hospital	Gen	15	2	Indiv	No	R N	1925
Newnan Hospital	Gen	25	6	Indep	No	Lay	1925
Plains 611—Sumter							
Wise Sanitarium ▲	Gen	60	32	Indep	Yes[1]	M D	1920
Rome 14 000—Floyd							
Harbin Hospital ▲	Gen	75	19	Indiv	Yes[1]	Lay	1908
McCall Hospital	Gen	40	15	Indep	Yes[1]	Lay	1910
Sandersville 2 641—Washington							
Rawlings Sanitarium	Gen	75	35	Indiv	Yes[1]	Lay	1893
Savannah 96 400—Chatham							
Central of Georgia Railway Hospital	Indus	62	40	Indus	No	R N	1927
Charity Hospital	Gen	42	18	Indep	Yes[1]	M D	1893
Georgia Infirmary	Gen	80	70	Indep	Yes[1]	M D	1838
Kiwanis Sun Shine Unit of Chatham Savannah Tuberculosis Association	TB	7	6	Indep	No	M D	1926
Oglethorpe Sanatorium	Gen	50	25	Indiv	Yes[1]	R N	1908
St Joseph's Hospital	Gen	75	55	Church	Yes[1]	Lay	1875
Savannah Hospital	Gen	70	50	Indep	Yes[1]	R N	1836
Telfair Hospital	Gen	60	35	Indep	Yes[1]	R N	1884
United States Marine Hospital No 20▲	Gen	146	130	USPHS	No	M D	1873
Statesboro 3 807—Bulloch							
Van Buren's Sanitarium	Gen	12	3	Indiv	Yes	M D	1918
Summerville 1 003—Chattooga							
Summerville Trion Hospital	Gen	25	New	Part	No	M D	1927
Swainsboro 1 578—Emanuel							
Franklin Coleman Hospital	Gen	15	8	Indiv	No	M D	1916
Thomasville 10 301—Thomas							
John D Archbold Memorial Hospital ▲	Gen	100	53	Indep	Yes[1]	M D	1925
Tifton 3 005—Tift							
Coastal Plain Hospital [3]	Gen	10	7	Part	No	Lay	1920
Valdosta 12 900—Lowndes							
Little-Griffin Private Hosp	Gen	50	18	Part	Yes[1]	M D	1915
Vidalia 2 860—Toombs							
New Vidalia Hospital	Gen	50	18	Indep	Yes[1]	M D	1920
Washington 4 208—Wilkes							
Washington General Hosp	Gen	20	5	Indep	No	M D	1924
Waycross 20 500—Ware							
Atlantic Coast Lines Hosp ▲	Indus	75	51	Indus	No	Lay	1899
King's Daughters Hospital	Gen	30	20	Church	Yes[1]	R N	1907
Winder 3 335—Barrow							
Mathews Hospital	Gen	10	2	Indiv	No	R N	1925

Total registered hospitals in Georgia 110 capacity 11 699 average census 8 940 Hospitals not admitted to the register 5 capacity, 30

IDAHO

City Pop—County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt M D R N Lay	Year Est
American Falls 1 547—Power							
Bethany Hospital	Gen	20	8	Church	No	R N	1913
Blackfoot 4 822—Bingham							
Blackfoot General Hospital	Gen	10	2	Indiv	No	Lay	1910
Southern Idaho Mental Hospital	N&M	350	350	State	No	M D	1884
Boise 23 200—Ada							
Boise City Detention Hosp	Iso	12	1	City	No	M D	1911
Idaho State Soldiers Home Hospital [2]	Gen	30	17	State	No	Lay	1905
St Alphonsus Hospital ▲	Gen	120	80	Church	Yes[1]	Lay	1895
St Luke's Hospital ▲	Gen	53	45	Church	Yes[1]	R.N	1902
Salvation Army Women's Home and Hospital	Mater	26	3	Church	No	R.N	1921
State Penitentiary Hosp	Gen	6	3	State	No	Lay	1864
United States Veterans Hospital No 52▲	Gen	235	140	VetBur	No	M D	1920
Bonners Ferry 1 236—Boundary							
Bonners Ferry Hospital	Gen	25	15	Indep	No	Lay	1910
Burley 5 408—Cassia							
Fremstad Hospital	Gen	9	3	Indiv	No	M D	1917
Caldwell 5 106—Canyon							
Caldwell Sanitarium [3]	Gen	18	10	Part	No	R.N	1919
Carey 740—Blaine							
Blaine Stake Maternity Hospital	Mater	6	3	Church	No	Lay	1923
Coeur d Alene 6 473—Kootenai							
Couer d Alene Hospital	Gen	22	10	Indep	No	R N	1905
Home Hospital	Gen	12	4	Indiv	No	R N	1926
Elk River 847—Clearwater							
Elk River Hospital	Gen	9	2	Indep	No	M D	
Ft Hall 190—Bingham							
Ft Hall Indian Agency Hospital	Gen	14	3	Indian	No	Lay	1922
Ft Hall Indian School Hospital	Gen	18	7	Indian	No	Lay	1908
Gooding 1 933—Gooding							
Gooding Hospital	Gen	15	10	Indep	No	M D	1918
Idaho Falls 8 064—Bonneville							
Idaho Falls Latter Day Saints Hospital ▲	Gen	87	50	Church	Yes[1]	Lay	1923
Spencer Hospital	Gen	40	23	Indep	Yes[1]	M D	1908
Kellogg 3 017—Shoshone							
Wardner Hospital	Gen	13	10	Indiv	No	M D	1883
Lapwai 359—Nez Perce							
Ft Lapwai Tuberculosis Sanatorium School	TB	110	67	Indian	No	Lay	1910
Lava Hot Springs 662—Bannack							
Lava Hot Springs Municipal Sanitarium	Gen	30	8	City	No	Lay	1925
Lewiston 6 574—Nez Perce							
St Joseph's Hospital ▲	Gen	100	51	Church	Yes[1]	Lay	1902
White Hospital	Gen	34	20	Indep	Yes[1]	R N	1916
Malad City 2 598—Oneida							
Community Hospital	Gen	6	4	Indep	No	M D	1925
Montpelier 2 984—Bear Lake							
Montpelier Hospital	Gen	0	5	Indiv	No	R N	1912
Moscow 3 956—Latah							
Gritman Private Hospital	Gen	25	15	Indiv	No	R N	1897

IDAHO—Cont. City Pop—County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt M D R N Lay	Year Est
Inland Empire Hospital	Gen	15	8	Indiv	No	R N	1905
University of Idaho Infirm	Gen	26	15	State	No	R N	1920
Nampa 7,621—Canyon							
Crescent Hill Retreat	N&M	325	316	State	No	M D	1918
Mercy Hospital ▲	Gen	35	20	Church	Yes[1]	R N	1919
Nazarene Missionary Sanitarium and Institute	Gen	25	13	Church	Yes	M D	1921
Orofino 537—Clearwater							
Northern Idaho Sanitarium	N&M	300	251	State	No	M D	1905
Orofino Hospital	Gen	13	5	Indep	No	M D	1925
Pocatello 18,900—Bannock							
Pocatello General Hosp ▲	Gen	50	32	Cy&Co	Yes[1]	R N	1906
St Anthony's Mercy Hosp ▲	Gen	42	23	Church	Yes[1]	R N	1918
Potlatch 1,500—Latah							
Potlatch Hospital	Gen	18	6	Indep	No	M D	1923
Priest River 545—Bonner							
Priest River Hospital	Gen	13	4	Part	No	M D	1917
Rexburg 3,500—Madison							
Emergency Hospital	Gen	12	7	Indiv	No	M D	1922
Rexburg General Hospital	Gen	12	7	Indiv	No	M D	1927
St Anthony 2,957—Fremont							
Idaho Industrial Training School	Gen	16	4	State	No	Lay	1903
St. Maries 1,960—Benewah							
Dr Platt's Hospital	Gen	12	8	Indiv	No	M D	1923
St Maries Hospital	Gen	12	17	Indiv	No	M D	1912
Salmon 831—Lemhi							
Salmon General Hospital	Gen	9	4	Part	No	R N	1924
Sandpoint 2,876—Bonner							
Page Hospital	Gen	30	15	Indiv	No	R N	1907
Sandpoint Hospital	Gen	10	5	Part	No	Lay	1924
Shoshone 1,155—Lincoln							
Dill Hospital	Gen	11	5	Indiv	No	Lay	1907
Soda Springs 935—Caribou							
Caribou County Hospital	Gen	26	18	County	No	M D	1925
Spirit Lake 940—Kootenai							
Lewis and Gerlough Hosp	Gen	10	2	Part	No	Lay	1907
Twin Falls 8,324—Twin Falls							
Twin Falls County General Hospital	Gen	53	36	County	No	R N	1918
Wallace 2,816—Shoshone							
Providence Hospital ▲	Gen	52	25	Church	No	Lay	1891
Wallace Hospital	Gen	50	35	Part	No	Lay	1899
Wendell 664—Gooding							
St Valentine's Hospital	Gen	15	10	Church	No	M D	1923
Winchester, 745—Lewis							
Winchester Hospital	Gen	7	5	Indiv	No	M D	1910

Total registered hospitals in Idaho 57 capacity 2,714 average census 1,905 Hospitals not admitted to the register 3 capacity 50

ILLINOIS City Pop—County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt M D R N Lay	Year Est
Alton 26,797—Madison							
Alton State Hospital	N&M	1,348	1,301	State	Yes[1]	M D	1917
St Anthony's Infirmary	N&M	75	70	Church	No	Lay	1925
St Joseph's Hospital ▲	Gen	75	45	Church	Yes[1]	R N	1864
Amboy 1,749—Lee							
Amboy Public Hospital[3]	Gen	22	8	Indep	No	Lay	1909
Anna 2,809—Union							
Anna State Hospital	N&M	1,988	1,978	State	Yes[1]	M D	1873
Hale-Willard Memorial Hospital of Anna	Gen	13	6	Cy&Co	Yes	Lay	1900
Annawan 429—Henry							
J M Young Hospital	Gen	14	2	Indiv	No	M D	1916
Augusta 1,146—Hancock							
Augusta Hospital	Gen	25	20	Indep	Yes	M D	1919
Aurora 40,954—Kane							
Aurora Hospital	Gen	67	46	Indep	Yes[1]	Lay	1886
Kane County Spring Brook Sanitarium	TB	55	53	County	No	M D	1920
Mercyville Sanitarium	N&M	160	140	Church	Yes	Lay	1915
St. Charles Hospital	Gen	100	79	Church	Yes[1]	Lay	1900
St Joseph Hospital	Gen	40	38	Church	Yes[1]	Lay	1911
Batavia 4,436—Kane							
Bellevue Place Sanitarium[3]	N&M	35	28	Indep	No	M D	1867
Kane County Home Hosp	Gen	36	20	County	No	Lay	1923
Belleville 26,909—St Clair							
St Clair County Home and Isolation Hospital	Gen	260	250	County	No	Lay	1844
St. Elizabeth's Hospital	Gen	85	60	Church	No	Lay	1875
St Vincent's Hospital	Gen	45	30	Church	No	Lay	1900
Station Hospital	Gen	25	8	Army	No	M D	1922
Belvidere 7,760—Boone							
Highland Hospital	Gen	30	18	Indep	No	R N	1915
St Joseph's Hospital	Gen	30	15	Church	No	Lay	1901
Bensenville 650—Du Page							
German Evangelical Orphans' and Old People's Home	Gen	12	4	Church	No	Lay	1895
Benton 7,201—Franklin							
Moore Hospital	Gen	25	12	Indiv	No	M D	1920
Berwyn 18,856—Cook							
Berwyn Hospital	Gen	40	25	Indep	No	M D	1919
Bloomington 30,421—McLean							
Mennonite Sanitarium	Gen	45	33	Church	Yes[1]	Lay	1919
St Joseph's Hospital	Gen	200	104	Church	Yes[1]	Lay	1877
Blue Island 13,184—Cook							
St Francis Hospital ▲	Gen	85	46	Church	No	R N	1905
Breese 2,128—Clinton							
St Joseph's Hospital	Gen	33	10	Church	No	Lay	1899
Bushnell 2,716—McDonough							
Elmgrove Sanitarium	TB	35	30	County	No	M D	1926
Cairo 14,472—Alexander							
St. Mary's Hospital	Gen	100	54	Church	Yes[1]	R N	1862
Canton 11,027—Fulton							
Graham Hospital	Gen	45	30	City	Yes[1]	R N	1908
Carbondale 6,267—Jackson							
Holden Hospital	Gen	50	22	Church	Yes[1]	R N	1913
Carlinville 5,212—Macoupin							
Carlinville Hospital	Gen	15	9	Part	No	M D	1919
Macoupin Hospital	Gen	20	16	Indiv	No	M D	1927
Carmi 2,667—White							
Carmi Hospital	Gen	9	4	Part	No	R N	1926
Centralia 14,082—Marion							
St Mary's Hospital	Gen	75	38	Church	No	R N	1909
Champaign 18,500—Champaign							
Burnham City Hospital	Gen	70	55	City	Yes[1]	R N	1894
Charleston 6,615—Coles							
M A Montgomery Memorial Sanatorium	Gen	30	12	Indep	Yes[1]	R N	1911
Oakwood Hospital	Gen	25	2	Part	No	R N	1921
Chatsworth 1,087—Livingston							
Chatsworth Hospital	Gen	10	2	Indiv	No	Lay	1904
Chicago 3,047,900—Cook							
Albert Merritt Billings Memorial Hospital ★+	Gen	208	New	Indep	No	M D	1927
Alexian Brothers Hosp ★▲	Gen	285	212	Church	Yes[1]	Lay	1865
Angel Guardian Orphanage[3]	Chil	20	15	Church	No	Lay	1865
Auburn Park Hospital	Gen	130	70	Indep	Yes	Lay	1917
Augustana Hospital ★▲	Gen	375	212	Church	Yes[1]	Lay	1884
Bethany Sanitarium and Hospital	Gen	14	10	Church	Yes	Lay	1920
Beulah Home and Maternity Hospital of Chicago	Mater	40	20	Indep	No	Lay	1894
Burnside Hospital[3]	Gen	50	45		Yes[1]	R N	1917
Burrows Hospital	Gen	40	New	Indiv	No	M D	1927
Chicago Eye Ear Nose and Throat College Hospital	EENT	75		Indep	No	M D	1897
Chicago Fresh-Air Hospital	TB	104	95	Indep	No	M D	1909
Chicago General Hospital	Gen	60	25	Indep	Yes[1]	R N	1896
Chicago Home for Convalescent Women and Children	Conv	53	50	Indep	No	Lay	1904
Chicago Home for Incurables	Incur	260	256	Indep	No	Lay	1886
Chicago Home for the Friendless	Gen	15	10	Church	No	Lay	1859
Chicago Hospital	Gen	60	25	Indep	Yes[1]	M D	1922
Chicago Lying In Hospital and Dispensary +▲	Mater	140	120	Indep	Yes	R N	1895
Chicago Maternity Hospital	Mater	6	4	Indiv	Yes	M D	1893
Chicago Memorial Hospital ★▲	Gen	100(a)	73	Indep	Yes[1]	Lay	1883
Chicago Municipal Tuberculosis Sanitarium +	TB	1,200	930	City	Yes	Lay	1909
Chicago Nursery and Half Orphan Asylum[3]	Chil	18	12	Indep	No	Lay	1860
Chicago Sanitarium	N&M	50	35	Indiv	No	M D	1925
Chicago State Hospital +	N&M	2,978	3,150	State	Yes[1]	M D	1870
Children's Memor Hosp +▲	Chil	230	158	Indep	Yes	R N	1884
Church Home for Aged Persons	Gen	9	4	Church	No	Lay	1870
Columbia Hospital[3]	Gen	16	12	Indep	No	Lay	1900
Columbus Hospital ▲	Gen	150	55	Church	Yes[1]	Lay	1903
Convent of the Good Shepherd	Chil	36	17	Church	No	Lay	1859
Cook County Hospital ★+▲	Gen	2,500	1,789	County	Yes[1]	Lay	1847
Cook County Psychopathic Hospital	N&M	167	102	County	Yes	M D	1889
Dailey Hospital and Sanit	Gen	50	15	Indep	No	M D	1926
Durand Hospital +	Iso	60	46	Indep	No	R N	1913
Englewood Hospital ★	Gen	150	90	Indep	Yes[1]	M D	1893
Evangelical Deaconess Hospital ▲	Gen	82	41	Church	Yes[1]	Lay	1905
Evangelical Hospital of Chicago ★	Gen	136	113	Church	Yes[1]	Lay	1910
Frances E Willard Hosp ★▲	Gen	110	87	Indep	Yes[1]	R N	1883
Franklin Boulevard Hosp	Gen	60	50	Indep	Yes[1]	R N	1925
Garfield Park Hospital ★▲	Gen	230	75	Indep	Yes[1]	Lay	1893
Grant Hosp of Chicago ★▲	Gen	136	111	Indep	Yes[1]	R N	1883
Henrotin Hospital ▲	Gen	75	75	Indep	Yes[1]	R N	1886
Home for Aged Jews	Gen	10	4	Indep	No	Lay	1892
Home for Destitute Crippled Children	Ortho	105	94	Indep	No	Lay	1893
Hospital of St Anthony de Padua ★▲	Gen	210	195	Church	Yes[1]	Lay	1896
House of Correction and Police Emergency Hosp	Gen	75	55	City	No	M D	1872
Illinois Central Hospital ★▲	Indus	200	130	Indus	No	R N	1916
Illinois Eye and Ear Infirmary +▲	EENT	140	102	State	No	M D	1858
Illinois Masonic Hospital ▲	Gen	57	57	Frat	Yes[1]	M D	1921
Illinois Steel Company Hospital	Indus	31	10	Indus	No	M D	1906
Iroquois Memorial Emergency Hospital	Gen	8	2	City	No	M D	1903
Isolation Hospital	Iso	35	2	City	No	M D	1893
James C King Home for Old Men	Gen	6	3	Indep	No	Lay	1911
Jefferson Park Hospital	Gen	85	56	Indep	Yes[1]	M D	1902
John B Murphy Hosp ★▲	Gen	100	76	Indep	Yes[1]	Lay	1912
Lake View Hospital ★▲	Gen	118	82	Indep	Yes[1]	Lay	1908
Lawrence Hall[2]	Chil	17	6	Church	No	Lay	1870
Lutheran Deaconess Home and Hospital ★▲	Gen	193	109	Church	Yes[1]	Lay	1897
Lutheran Memorial Hosp ★▲	Gen	175	110	Church	Yes[1]	Lay	1923
Marks Nathan Jewish Orphan Home[2]	Chil	22	5	Indep	No	Lay	1906
Marquette Sanitarium	N&M	10	7	Indiv	No	M D	1926
Martha Washington Hosp	Gen	70	45	Indep	Yes	Lay	1926
McDonald Rest Cure	Conv	10	5	Indiv	No	Lay	1914
Mercy Hospital ★▲	Gen	400	370	Church	Yes[1]	R N	1849
Methodist Episcopal Old People's Home[2]	Gen	30	15	Church	No	Lay	1898
Michael Reese Hospital ★+▲	Gen	503	365	Indep	Yes[1]	M D	1885
Mid West Hospital	Gen	50	30	Indiv	Yes[1]	M D	1901

ILLINOIS—Cont City Pop—County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt M D R N Lay	Year Est
Misericordia Hospital and Infants Home ▲	Mater	30	50	Church	No	Lay	1921
Montana Hospital	Gen	7	1	Indiv	No	M D	1922
Mother Cabrini Memorial Hospital	Gen	150	92	Church	Yes[1]	R N	1911
Mt Sinai Hospital of Chicago ★▲	Gen	160	140	Indep	Yes[1]	R N	1919
Municipal Contagious Disease Hospital ✚	Iso	330	138	City	Yes	M D	1917
North Avenue Hospital	Gen	12	10	Indiv	No	M D	1905
North Chicago Hospital ▲	Gen	90	70	Indep	Yes[1]	R N	1906
Norwegian American Hosp ★	Gen	130	100	Indep	Yes[1]	R N	1894
Orthodox Jewish Home for the Aged ⁻	Gen	23	12	Church	No	Lay	1902
Palmer House Hospital	Gen	10	5	Indiv	No	M D	1926
Post Graduate Hospital and Medical School	Gen	85	48	Indep	Yes[1]	Lay	1887
Presbyterian Hospital ★✚▲	Gen	412	348	Church	Yes[1]	Lay	1883
Provident Hospital ★	Gen	65	54	Indep	Yes[1]	R N	1892
Pullman Emergency Hosp	Gen	25	15	Indep	No	M D	1908
Ravenswood Hospital ★✚▲	Gen	150	118	Indep	Yes[1]	Lay	1907
Research and Educational Hospital ★✚	Gen	150	123	State	No	M D	1925
Resthaven Convalescent Home	Conv	30	30	Indep	No	M D	1912
Robert Burns Hospital [3]	Gen	40	32	Indep	Yes[1]	M D	1907
Roseland Community Hospital ★▲	Gen	101	79	Indep	Yes[1]	Lay	1924
St Annes Hospital ★▲	Gen	112	75	Church	Yes[1]	Lay	1903
St Bernards Hospital ★▲	Gen	200	140	Church	Yes[1]	R N	1903
St Elizabeths Hosp ★✚▲	Gen	225	125	Church	Yes[1]	R N	1887
St. Josephs Hospital ★▲	Gen	166	150	Church	Yes[1]	R N	1859
St *Lukes Hospital* ★✚▲	Gen	672	504	Indep	Yes[1]	M D	1863
St Mary of Nazareth Hospital ★▲	Gen	225	170	Church	Yes[1]	Lay	1894
St Pauls Hospital	Gen	22	12	Church	Yes[1]	M D	1914
St Vincents Infant and Maternity Hospital [3]	Mater	15	10	Church	No	Lay	1882
Salvation Army Womens Home and Hospital	Mater	12	6	Church	No	Lay	1892
Shore View Sanitarium	Gen	14	12	Indiv	No	R N	1921
Shriners Hospital for Crippled Children ▲	Ortho	50	48	Frat	No	R N	1926
South Chicago Community Hospital	Gen	45	37	Indep	Yes[1]	R N	1898
South Shore Hospital ▲	Gen	100	80	Indep	Yes[1]	Lay	1912
Streeter Hospital	Gen	50	35	Indiv	No	M D	1888
Swedish Covenant Hospital and Home of Mercy ★▲	Gen	125	120	Church	Yes[1]	Lay	1886
United States Marine Hospital No 5 ★▲	Gen	127	125	USPHS	No	M D	1852
University Hospital ★▲	Gen	105	79	Indep	Yes[1]	R N	1907
Vincennes Sanitarium [3]	Conv	20	12	Indiv	No	Lay	1921
Washington Boulevard Hospital ★▲	Gen	100	85	Indep	Yes[1]	Lay	1889
Washingtonian Home	Al N Dr	30	15	Indep	Yes	Lay	1862
Washington Park Community Hospital ▲	Gen	152	90	Indep	Yes[1]	Lay	1904
Wesley Memorial Hosp ★▲	Gen	250	220	Church	Yes[1]	Lay	1888
West Side Hospital ★	Gen	170	128	Indep	Yes[1]	R N	1896
Women and Childrens Hospital of Chicago ★	Gen	100	78	*Indep*	Yes[1]	R N	1865
Chicago Heights 22 600—Cook							
Chicago Heights Eye Ear Nose and Throat Hosp	EEN&T	5	2	Indiv	No	M D	1915
St James Hospital	Gen	140	62	Church	No	Lay	1911
Cicero 65 400—Cook							
Western Electric Company Hospital	Indus	12	2	Indus	No	Lay	1910
Clinton 5 898—De Witt							
Dr John Warner Hospital	Gen	25	12	City	No	Lay	1911
Collinsville 10 573—Madison							
Harrison Hospital	Gen	6	3	Indiv	No	M D	1909
Compton 283—Lee							
Compton Hospital	Gen	10	4	Indiv	No	M D	1905
Danville 37 600—Vermilion							
Lake View Hospital ▲	Gen	113	85	Indep	Yes[1]	Lay	1892
National Home for Disabled *Volunteer Soldiers* ▲	Gen	263	213	Federal	No	M D	1899
St Elizabeths Hospital	Gen	135	110	Church	Yes[1]	Lay	1882
Decatur 55 000—Macon							
Decatur and Macon County Hospital ★▲	Gen	138	126	Indep	Yes[1]	M D	1916
Macon County Tuberculosis Sanatorium	TB	48	38	County	Yes	M D	1923
St Marys Hospital	Gen	115	82	Church	No	R N	1878
Wabash Employees Hosp ▲	Indus	85	57	Indep	No	Lay	1903
Deerfield 610—Lake							
Ridge Farm Preventorium	TB	30	30	Indep	No	Lay	1912
DeKalb 7 871—DeKalb							
DeKalb County Tuberculosis Sanatorium	TB	18	8	County	No	Lay	1919
DeKalb Public Hospital	Gen	50	20	City	No	R N	1910
St Marys Hospital	Gen	65	20	Church	No	Lay	1922
Dixon 8,541—Lee							
Dixon Public Hospital	Gen	60	30	City	Yes[1]	R N	1895
Dixon State Hospital	Epil	2 141	1 963	State	No	M D	1914
Du Quoin 7 285—Perry							
Marshall Browning Hospital	Gen	60	35	Indep	No	R N	1922
Dwight 2 255—Livingston							
United States Veterans Hospital No 53 ▲	Gen	212	125	VetBur	No	M D	1920
East Moline 10 653—Rock Island							
East Moline State Hosp ✚	N&M	1 900	1 877	State	Yes[1]	M D	1898
East St Louis 72 300—St Clair							
Christian Welfare Hospital	Gen	50	25	Church	Yes[1]	Lay	1895
St Marys Hospital ▲	Gen	280	110	Church	Yes[1]	Lay	1890
Edwardsville 5 336—Madison							
Madison County Hospital	Gen	21	13	County	No	Lay	1860
Madison County Sanitarium	TB	125	40	County	No	M D	1926

ILLINOIS—Cont City, Pop—County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch.	Supt M D R N Lay	Year Est
Effingham 4 024—Effingham							
St Anthonys Hospital	Gen	80	65	Church	No	Lay	1875
Elgin 34 000—Kane							
Elgin State Hospital	N&M	2 700	2 815	State	Yes[1]	M D	1870
Lakeview Sanatorium	Conv	15	5	Indiv	No	M D	1924
Resthaven Sanitarium	Conv	75	55	Indiv	No	Lay	1906
St Josephs Hospital	Gen	150	51	Church	Yes[1]	Lay	1902
Sherman Hospital	Gen	100	65	Indep	Yes[1]	R N	1888
Elmhurst 4 594—Du Page							
Elmhurst Hospital	Gen	78	40	Indep	Yes[1]	R N	1926
Evanston 45 100—Cook							
The Cradle Society	Chil	40	27	Indep	No	R N	1923
Evanston Hospital ★▲	Gen	250	177	Indep	Yes[1]	R N	1891
Evanston Sanitarium [3]	Gen	12	7		No	M D	1914
Grove House for Convalescents	Conv	35	27	Indep	No	R N	1902
St Francis Hospital ★▲	Gen	150	95	Church	Yes[1]	Lay	1900
Fairbury 2 390—Livingston							
Fairbury Hospital	Gen	6	4	Indep	No	Lay	1914
Flora 3 558—Clay							
Flora Hospital	Gen	12	4	*Indiv*	No	M D	1924
Forest Park 13 600—Cook							
German Old Peoples Home ⁻	Gen	47	25	Indep	No	Lay	1885
Ft Sheridan 602—Lake							
Station Hospital	Gen	116	51	Army	No	M D	1890
Freeport, 20 900—Stephenson							
Evangelical Deaconess Hosp	Gen	87	40	Church	Yes[1]	Lay	1904
Freeport Methodist Memorial Hospital	Gen	40	20	Church	Yes[1]	M D	1913
St Francis Hospital	Gen	160	90	Church	Yes[1]	R N	1890
Galesburg 25 000—Knox							
Galesburg Cottage Hospital	Gen	78	43	Indep	Yes[1]	Lay	1891
St Marys Hospital	Gen	60	45	Church	No	Lay	1909
Geneseo 3 375—Henry							
J C Hammond City Hosp	Gen	12	4	City	No	R N	1901
Geneva 2 803—Kane							
Community Hospital	Gen	60	32	Indep	Yes[1]	R N	1919
State Training School for Girls ⁻	Gen	30	15	State	No	Lay	1894
Gilman 1 448—Iroquois							
Gilman Community Hosp	Gen	15	10	Indep	No	R N	1924
Godfrey 201—Madison							
Beverly Farm	N&M	70	59	Indep	No	M D	1897
Granite City 18 600—Madison							
St Elizabeths Hospital	Gen	60	42	Church	Yes[1]	Lay	1921
Great Lakes — Lake							
United States Naval Hospital ▲	Gen	[illegible]	400	Navy	No	M D	1911
Harrisburg 7 125—Saline							
Harrisburg Hospital	Gen	50	21	Indep	No	M D	1923
Lightner Hospital	Gen	30	15	Indiv	No	M D	1909
Harvard 3 294—McHenry							
Pecks Hospital	Gen	20	12	Indiv	No	M D	1924
Red Cross Isolation Hosp	Iso	15	1	City	No	M.D	
Harvey 9 931—Cook							
Ingalls Memorial Hospital ▲	Gen	50	58	Indep	Yes[1]	R N	1923
Henry 1 637—Marshall							
Drs Cromwell and Cogg hall Hospital	Gen	8	0	Part	No	M D	1912
Herrin 18 700—Williamson							
Herrin Hospital	Gen	40	27	Part	No	R N	1912
Highland 2 675—Madison							
St Joseph's Hospital	Gen	70	60	Church	No	Lay	1877
Highland Park, 6 167—Lake							
Highland Park Hospital ▲	Gen	52	50	Indep	No	R.N	1915
Hillsboro 5 074—Montgomery							
Hillsboro Hospital	Gen	*20*	12	*Indep*	No	R N	1916
Hinsdale 4 042—DuPage							
Hinsdale Sanitarium and Benevolent Association	Gen	149	137	Indep	Yes[1]	M D	1904
Irvington 258—Washington							
Hudelson Baptist Home	Chil	7	3	Church	No	Lay	1903
Jacksonville 16 000—Morgan							
Illinois School for Blind	Gen	20	3	State	No	Lay	1847
Illinois School for the Deaf	Gen	40	15	State	No	Lay	1846
Jacksonville State Hospital	N&M	3 250	2,898	State	Yes[1]	M D	1847
Norbury Sanatorium	N&M	100	93	Indep	No	M D	1901
Oaklawn Satatorium	TB	35	28	County	No	M D	1922
Our Saviors Hospital ▲	Gen	85	40	Church	Yes[1]	Lay	1896
Passavant Memorial Hosp ▲	Gen	75	55	Church	Yes[1]	Lay	1875
Joliet 41 000—Will							
Illinois State Penitentiary Hospital ⁻	Gen	50	25	State	No	M D	1860
St Josephs Hospital ★▲	Gen	190	160	Church	Yes[1]	Lay	1882
Silver Cross Hospital ✚▲	Gen	94	64	Church	Yes[1]	Lay	1895
Will County Tuberculosis Sanitarium	TB	57	50	County	No	M D	
Kankakee 18 000—Kankakee							
Kankakee State Hospital	N&M	3 700	3,200	State	Yes[1]	M D	1878
St Marys Hospital ▲	Gen	92	40	Church	Yes[1]	Lay	1895
Kenilworth 1 188—Cook							
Kenilworth Sanitarium	N&M	35	25	Indiv	No	M D	1905
Kewanee 20 100—Henry							
Kewanee Public Hospital ▲	Gen	48	23	Indep	Yes[1]	R N	1919
St Francis Hospital ▲	Gen	55	35	Church	Yes[1]	R N	1902
Knoxville 1 708—Knox							
Knox County Home and Hospital	Gen	18	7	County	No	Lay	1882
LaGrange 6 525—Cook							
Illinois Masonic Orphans Home ⁻	Chil	26	14	Frat	No	Lay	1886
La Harpe 1 323—Hancock							
Davier Memorial Hospital	Gen	14	7	Indep	No	R N	1923
Lake Bluff 819—Lake							
Methodist Deaconess Orphanage ⁻	Chil	12	5	Church	No	Lay	1894
Lake Forest 3 657—Lake							
Alice Home Hospital	Gen	29	9	Indep	No	R N	1898
La Salle 14 600—La Salle							
St Marys Hospital	Gen	85	75	Church	Yes[1]	Lay	1887

ILLINOIS—Cont

City Pop—County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt MD RN Lay	Year Est
Lincoln 12 500—Logan							
Evangelical Deaconess Hosp	Gen	60	32	Church	Yes¹	RN	1902
Lincoln State School and Colony +	N&M	325	215	State	Yes¹	MD	1865
St Clara's Hospital	Gen	61	46	Church	No	Lay	1884
Litchfield 6 215—Montgomery							
St Francis Hospital	Gen	120	101	Church	No	RN	1875
Mackinaw 828—Tazewell							
Oak Knoll (TB)	TB	38	31	County	No	RN	1921
Macomb 6 714—McDonough							
Holmes Hospital	Gen	45	35	Church	Yes¹	Lay	1913
Marietta Phelps Hospital	Gen	30	16	Indep	Yes¹	RN	1900
St Francis Hospital	Gen	50	30	Church	Yes	Lay	1903
Marion 10 478—Williamson							
Marion Hospital	Gen	18	4	Indiv	No	MD	1921
Mattoon 15 000—Coles							
Independent Order Odd Fellows Old Folks Home Hospital	Gen	35	20	Frat	No	Lay	1898
Memorial Methodist Hosp	Gen	40	30	Church	Yes¹	RN	1905
Maywood 14 600—Cook							
Baptist Old People's Home	Gen	8	3	Church	No	Lay	1907
Edward Hines Jr Hospital▲	Gen	984	821	VetBur	No	MD	1921
Melrose Park 7 147—Cook							
Westlake Hospital▲	Gen	84	New	Indep	Yes	RN	1927
Menard 22—Randolph							
Chester State Hospital	N&M	288	267	State	No	MD	1891
Southern Illinois Penitentiary Hospital	Gen	32	15	State	No	MD	1905
Mendota 3 934—La Salle							
Harris Hospital	Gen	20	10	Indiv	No	Lay	1918
Minonk 2,109—Woodford							
Woodford County Tuberculosis Sanatorium	TB	13	8	County	No	MD	1921
Moline 34 500—Rock Island							
Lutheran Hospital	Gen	77	60	Church	Yes¹	RN	1916
Moline City Hospital	Gen	94	48	City	Yes¹	RN	1896
Monmouth 8 116—Warren							
Monmouth Hospital	Gen	35	30	City	Yes¹	RN	1902
Mooseheart 187—Kane							
Mooseheart Hospital	Gen	70	38	Frat	No	Lay	1919
Morris 4 505—Grundy							
Morris Hospital	Gen	19	11	City	Yes	RN	1905
Mt Vernon 10 465—Jefferson							
Mt Vernon Hospital	Gen	30	20	Indiv	Yes	MD	1908
Dr Swift's Maternity Home Hospital	Mater	9	5	Indiv	No	MD	1923
Murphysboro 12 900—Jackson							
St Andrew's Hospital▲	Gen	60	[illegible]	Church	No	Lay	1897
Naperville 3,830—DuPage							
Edward Sanatorium	TB	100	85	Indep	No	MD	1907
Normal 5 143—McLean							
Brokaw Hospital	Gen	73	58	Church	Yes¹	RN	1902
Fairview Sanatorium	TB	55	53	County	No	MD	1919
Illinois Soldiers Orphans Home	Chil	50	25	State	No	Lay	1868
North Chicago 5 839—Lake							
United States Veterans Hospital No 105▲	N&M	677	325	VetBur	No	MD	1926
Oak Forest 50—Cook							
Cook County Infirmary +*	Gen	800	800	County	No	Lay	1910
Cook County Tuberculosis Hospital	TB	634	491	County	No	Lay	1910
Oak Park 53 500—Cook							
Oak Park Hospital ★▲	Gen	125	100	Church	Yes¹	RN	1905
West Suburban Hospital ★▲	Gen	327	178	Indep	Yes¹	Lay	1914
Oakawville 614—Washington							
Original Mineral Springs and Baths	Conv	130	100	Indiv	No	MD	1894
Olney 4 491—Richland							
Olney Sanitarium▲	Gen	68	51	Indep	Yes¹	MD	1898
Oregon 2 227—Ogle							
Oregon Hospital	Gen	10	5	Indiv	No	MD	1924
Ottawa 11 800—La Salle							
Highland	TB	60	44	County	No	RN	1919
Illinois Valley Hospital	Gen	20	15	Indep	Yes¹	MD	1917
Ottawa Tuberculosis Sanat	TB	60	52	Indep	Yes	Lay	1904
Ryburn Memorial Hospital	Gen	65	45	City	Yes¹	RN	1895
Palatine 1 210—Cook							
Palatine Hospital	Gen	10	8	Indiv	No	MD	1920
Pana 6 122—Christian							
Huber Memorial Hospital▲	Gen	[illegible]	[illegible]	Church	Yes¹	RN	1913
Little Sanitarium	Gen	52	15	Indiv	No	MD	1925
Paris 7 985—Edgar							
Paris Hospital	Gen	25	13	Indiv	Yes¹	MD	1908
Pekin 13 000—Tazewell							
Pekin Public Hospital	Gen	30	11	Indep	Yes¹	RN	1913
Peoria 82 500—Peoria							
Home for the Friendless	Chil	12	4	Indep	No	Lay	1872
John C Proctor Hospital	Gen	100	78	Indep	Yes¹	RN	1882
Methodist Hospital of Central Illinois	Gen	136	85	Church	Yes¹	RN	1895
Michell Farm	N&M	25	20	Indiv	No	MD	1917
Peoria Isolation Hospital	Iso	50	4	City	No	RN	1910
Peoria Municipal Tuberculosis Sanitarium	TB	70	29	Cy&Co	No	RN	1918
Peoria Sanitarium	N&M	25	20	Indiv	No	MD	1910
Peoria State Hospital +	N&M	2 700	2 600	State	Yes¹	MD	1895
St Francis Hospital ★▲	Gen	230	150	Church	Yes¹	RN	1876
Peru 9 188—La Salle							
People's Hospital	Gen	50	35	Indep	Yes¹	RN	1914
Pinckneyville 2,649—Perry							
Hiller Hospital	Gen	24	10	Indiv	No	MD	1916
Pontiac 6 664—Livingston							
Illinois State Reformatory	Gen	100	10	State	No	Lay	1867
Livingston County Sanat	TB	40	21	County	No	MD	1917
St James Hospital	Gen	40	20	Church	No	Lay	1906
Princeton 4 126—Bureau							
Julia Rackley Perry Memorial Hospital	Gen	28	13	City	No	RN	1920
Quincy 39 200—Adams							
Adams County Tuberculosis Sanatorium	TB	70	46	County	No	MD	1918
Blessing Hospital▲	Gen	85	65	Indep	Yes¹	RN	1874
Illinois Soldiers and Sailors Home and Hospital*	Gen	300	175	State	No	MD	1887
St Aloysius Orphanage	Chil	20	10	Church	No	Lay	1852
St Mary's Hospital▲	Gen	150	145	Church	No	RN	1866
Rantoul 1 551—Champaign							
Station Hospital	Gen	50	25	Army	No	MD	[illegible]
Red Bud 1 141—Randolph							
St Clement's Hospital	Gen	15	12	Church	No	Lay	1900
Riverside 2 532—Cook							
Scottish Old People's Home	Gen	6	2	Indep	No	Lay	1901
Roberts 444—Ford							
Roberts Hospital	Gen	6	4	Part	No	MD	1923
Robinson 3 375—Crawford							
Robinson Hospital	Gen	20	8	Part	No	RN	1916
Rochelle 3,310—Ogle							
Lincoln Hospital	Gen	45	21	Indiv	No	MD	1914
Rockford 78 700—Winnebago							
Children's Home of Rockford	Chil	20	4	Indep	No	RN	1906
Rockford Hospital▲	Gen	88	65	Indep	Yes¹	Lay	1883
Rockford Municipal Sanit	TB	70	70	Cy&Co	No	MD	1915
St Anthony's Hospital	Gen	110	85	Church	Yes¹	Lay	1909
Swedish American Hospital	Gen	70	40	Indep	Yes¹	RN	1918
Dr Wilgus Sanitarium	N&M	35	30	Indiv	No	MD	1917
Winnebago County Hospital	Gen	40	15	County	No	RN	1926
Rock Island 41 000—Rock Island							
St Anthony's Hospital▲	Gen	150	110	Church	Yes¹	RN	1884
Rosiclare 1 522—Hardin							
Rosiclare Hospital	Indus	17	5	Indus	No	MD	1917
Rushville 2 275—Schuyler							
Culbertson Hospital	Gen	18	10	Indiv	No	Lay	1921
St Charles 4 099—Kane							
St Charles City Hospital	Gen	22	12	City	No	RN	1920
St Charles School for Boys	Gen	15	6	State	No	MD	1904
Sandwich 2 459—DeKalb							
Horatius N Woodward Memorial Hospital	Gen	15	10	Indep	No	RN	1921
Savanna 5 237—Carroll							
Savanna City Hospital	Gen	14	5	City	No	RN	1922
Station Hospital	Gen	7	3	Army	No	MD	1918
Shelbyville 3 568—Shelby							
Shelby County Memorial Hospital	Gen	25	10	County	No	RN	1918
Sparta 3 310—Randolph							
Dr Nevin G Stevenson's Sanitarium	Gen	10	7	Indiv	No	MD	1920
Springfield 61 700—Sangamon							
David Prince Sanitarium	ENT	50	[illegible]	Indiv	No	Lay	1897
Palmer Tuberculosis Sanat	TB	85	79	Indep	No	MD	1913
St John's Hospital	IsoGen	523	418	Church	Yes¹	MD	1875
St John's Sanitarium	TB	215	175	Church	No	Lay	1918
Springfield Hospital	Gen	85	65	Church	Yes¹	RN	1897
Springvalley 6 493—Bureau							
St Margaret's Hospital	Gen	58	37	Church	Yes¹	Lay	1905
Sterling 8 838—Whiteside							
Public Hospital of the City of Sterling	Gen	50	20	City	Yes¹	RN	1912
Stewardson 731—Shelby							
Frank Holmes Hospital	Gen	5	2	Indiv	No	MD	1925
Streator 15 100—La Salle							
St Mary's Hospital	Gen	125	75	Church	No	Lay	1888
Sublette 300—Lee							
Angear Hospital	Mater	15	5	Indiv	No	MD	1910
Sullivan 2 532—Moultrie							
Illinois Masonic Home*	Gen	85	40	Frat	No	Lay	1903
Sycamore 4 261—DeKalb							
Sycamore Municipal Hosp	Gen	20	1	City	No	RN	[illegible]
Taylorville 5 806—Christian							
St Vincent's Hospital	Gen	60	50	Church	Yes¹	Lay	1906
Toledo 757—Cumberland							
Toledo Sanitarium	Gen	5	3	Indiv	No	MD	1900
Tuscola 2 564—Douglas							
Sarah A Jarman Memorial Hospital	Gen	23	9	Indep	No	RN	1915
Urbana 11 500—Champaign							
Champaign County Hosp	Gen	24	20	County	No	Lay	1912
McKinley University Hosp	Gen	92	42	State	No	RN	1925
Mercy Hospital	Gen	[illegible]	28	Church	No	RN	1923
The Outlook	TB	45	48	County	No	MD	1922
Vandalia 3 316—Fayette							
Mark Greer Hospital	Gen	25	16	Indiv	No	MD	1925
Waterman 401—DeKalb							
East Side Hospital	Gen	30	18	Indiv	No	MD	1901
Watseka 2 817—Iroquois							
Iroquois Hospital	Gen	27	19	County	Yes¹	RN	1916
Waukegan 22 300—Lake							
Lake County General Hosp	Gen	70	65	County	No	MD	1914
Sheridan Road Sanitarium³	N&M	15	12	Indiv	No	Lay	1922
Victory Memorial Hospital	Gen	75	56	Indep	Yes¹	RN	1891
West Chicago 2 594—Du Page							
Country Home for Convalescent Children	Conv	105	80	Indep	No	Lay	1911
West Frankfort 10 772—Franklin							
West Frankfort Union Hosp	Indus	65	42	Indus	No	MD	1913
Wheaton 4 137—Du Page							
Howe Home*	N&M	16	12	Part	No	Lay	1905
Mary E Pogue Sanitarium	N&M	45	26	Indiv	No	Lay	1903
Wheeling 313—Cook							
Wheeling Hospital	Gen	9	4	Indiv	No	MD	1924
White Hall 2 954—Greene							
Walton Hospital	Gen	12	5	Indiv	No	RN	1921
Wilmington 1 384—Will							
Soldiers Widows Home of Illinois	Gen	25	12	State	No	Lay	1895

ILLINOIS—Cont

City Pop—County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt M D R.N Lay	Year Est
Winfield 264—Du Page							
Chicago Winfield Tuberculosis Sanitarium	TB	110	90	Indep	No	Lay	1908
Zace Sanatorium	TB	55	8	Indiv	No	R.N	1922
Winnetka 6 694—Cook							
North Shore Health Resort	Conv	75	65	Indep	No	Lay	1901
Woodriver 3 476—Madison							
Woodriver Maternity Hosp	Mater	5	1	Indiv	No	R N	1926
Woodstock 5 523—McHenry							
Dr Weirick's Sanitarium	Conv	8	New	Indiv	No	M D	1927
Woodstock Hospital	Gen	25	15	Indep	No	R N	1908
Zeigler 500—Franklin							
Zeigler Hosiptal	Indus	28	1	Indus	No	M D	1912

Total registered hospitals in Illinois 367 capacity 57 388 average census 45 080 Hospitals not admitted to the register 46 capacity 1 562

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City, Pop—County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt M D R.N Lay	Year Est
Anderson 33,854—Madison							
Delco Remy Division General Motors Corporation	Indus	13	6	Indus	No	M D	1924
Madison County Ella B Kehrer' Hospital	TB	50	30	County	No	Lay	1923
Madison County Infirmary -	Gen	19	11	County	No	Lay	1831
St John's Hospital ▲	Gen	65	36	Church	Yes[1]	Lay	1894
Angola 2,650—Steuben							
Cameron Hospital	Gen	14	9	Indiv	No	R N	1926
Auburn 3 919—De Kalb							
Dr Bonnell M Souder Hosp	Gen	12	6	Part	Yes	M D	1914
Sander's Hospital	Gen	10	7	Indiv	No	R N	1924
Bedford 8 963—Lawrence							
Dunn Memorial Hospital	Gen	35	12	County	No	R N	1910
Bloomington 12,589—Monroe							
Bloomington Hospital	Gen	35	27	Indep	Yes[1]	R N	1904
Bluffton 5 591—Wells							
Wells County Hospital	Gen	25	11	County	No	R N	1917
Brazil 9 293—Clay							
Community Hospital	Gen	16	8	Indep	No	R.N	1920
Butlerville 450—Jennings							
Indiana State Hospital for Feeble Minded	N&M	302	236	State	No	Lay	1920
Clinton 13 642—Vermillion							
Vermillion County Hospital	Gen	42	15	County	No	R N	1924
Columbus 8 990—Bartholomew							
Bartholomew County Hosp	Gen	30	17	County	No	R N	1916
Connersville, 12 454—Fayette							
Fayette Memorial Hospital	Gen	38	22	Indep	No	R N	1903
Crawfordsville 10 530—Montgomery							
Ben Hur Sanitarium	Gen	10	3	Indiv	No	M D	1914
Culver Hospital	Gen	19	14	County	No	R N	1902
Crown Point 3 232—Lake							
Lake County Tuberculosis Sanatorium	TB	100	91	County	No	M D	1925
Decatur 4 762—Adams							
Adams County Memorial Hospital	Gen	45	18	County	No	R.N	1923
Dillsboro 471—Dearborn							
Dillsboro Sanitarium	Gen	110	60	Indep	No	Lay	1911
Elkhart 27 104—Elkhart							
Elkhart General Hospital	Gen	75	50	Indep	Yes[1]	R N	1912
Elwood 10 790—Madison							
Hoppenrath Hospital	Gen	10	3	Part	No	M D	1922
Mercy Hospital	Gen	25	12	Church	No	R N	1926
Evansville 93 601—Vanderburg							
Boehne Tuberculosis Hosp	TB	80	78	County	No	M D	1910
Evansville State Hospital	N&M	1 200	816	State	No	M D	1891
Hayden Hospital	Gen	40	20	Part	Yes[1]	R.N	1898
Highland Sanitarium	Gen	15	3	Indiv	No	M D	1923
Protestant Deaconess Hospital ▲	Gen	120	75	Church	Yes[1]	R N	1892
St Mary's Hospital ▲	Gen	125	70	Church	Yes[1]	R N	1871
United States Marine Hospital No 8▲	Gen	54	34	USPHS	No	M D	1856
Walker Hospital ▲	Gen	85	46	Indep	Yes[1]	M D	1893
Ft Benjamin Harrison — Marion							
Station Hospital	Gen	50	23	Army	No	M D	1905
Ft Wayne 97 846—Allen							
Ft Wayne and Allen County Isolation Hospital	Iso	10	3	Cy&Co	No	Lay	1907
Ft Wayne Lutheran Hospital ★▲	Gen	120	101	Church	Yes[1]	R N	1902
Indiana School for Feeble Minded Youth	N&M	80	80	State	No	M D	1888
Irene Byron Tuberculosis Sanatorium	TB	186	140	County	Yes	M D	1916
Methodist Episcopal Hospital ★▲	Gen	122	85	Church	Yes[1]	M D	1918
Dr Pulliam's Private Sanit	N&M	12	9	Indiv	No	M D	1901
St Joseph's Hospital ★▲	Gen	200	146	Church	Yes[1]	R N	1868
Frankfort 13 051—Clinton							
Clinton County Hospital ▲	Gen	43	15	County	No	R N	1923
Franklin 4 909—Johnson							
Eastern Star Hospital at Indiana	Gen	68	52	Frat	No	Lay	1915
French Lick 1 980—Orange							
French Lick Springs Hotel	Conv	600	500	Indep	No	M D	1850
Garrett, 4 796—DeKalb							
Sacred Heart Hospital	Gen	45	35	Church	No	Lay	1902
Gary 76 870—Lake							
Gary Hospital ▲	Indus	100	40	Indus	No	M D	1910
Methodist Episcopal Hosp ▲	Gen	85	65	Church	Yes[1]	Lay	1923
St Antonio Hospital	Gen	50	18	Indep	No	M D	1911
St Mary's Hospital ★▲	Gen	125	122	Church	Yes[1]	Lay	1907
Goshen 9 525—Elkhart							
Goshen Hospital	Gen	35	15	Indep	Yes[1]	R.N	1909
Greencastle 3 780—Putnam							
Indiana State Farm [2]	Gen	12	12	State	No	Lay	1915
Putnam County Hospital	Gen	40	13	County	No	R.N	1923

INDIANA—Cont

City Pop—County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt M D R N Lay	Year Est
Greensburg 5 345—Decatur							
Decatur County Memorial Hospital	Gen	35	12	County	No	R N	1922
Longley Hospital [2]	Gen	72	70	Frat	No	Lay	1900
Hammond 50 385—Lake							
St Margaret's Hospital ★▲	Gen	300	125	Church	Yes[1]	Lay	1898
Hartford City 6 185—Blackford							
Blackford County Hospital	Gen	50	12	County	No	R N	1923
Howe 7—Lagrange							
Howe School Infirmary [2]	Gen	24	10	Church	No	Lay	1881
Huntington 15 914—Huntington							
Huntington County Hosp	Gen	25	20	County	Yes[1]	R N	1913
Indianapolis 358 819—Marion							
Central State Hospital	N&M	1 722	1 633	State	No	M D	1848
Indiana Christian Hospital	Gen	120	81	Church	Yes[1]	Lay	1895
Indiana Girls School -	Gen	13	5	State	No	M D	1907
Indiana State School for the Deaf	Gen	40	10	State	No	Lay	1844
Indiana Woman's Prison -	Gen	7	4	State	No	Lay	1869
Indianapolis City Hosp ★+▲	Gen	556	218	City	Yes[1]	M D	1882
Indianapolis Orphan Asylum [2]	Chil	14	6	Indep	No	Lay	1850
Irving Sanitarium	Gen	15	8	Indiv	No	Lay	1916
Dr John F Kerr's Sanat	Gen	9	4	Indiv	No	M D	1905
James Whitcomb Riley Hospital for Child (Affil)★+▲	Chil	150	105	State	Yes[1]	Lay	1924
Julietta Insane Hospital	N&M	250	175	County	No	Lay	1900
Methodist Episcopal Hosp ★	Gen	344	300	Church	Yes[1]	Lay	1899
Mt Jackson Sanitarium	Conv	25	10	Indep	No	Lay	1880
Neuronhurst Dr W B Fletcher's Sanatorium	N&M	50	40	Indep	Yes[1]	M D	1880
Norways Sanatorium	N&M	25	18	Indep	No	M D	1898
Robert W Long Hosp +★▲	Gen	116	112	State	Yes[1]	Lay	1914
St Francis Hospital	Gen	75	45	Church	No	Lay	1913
St Vincent's Hospital ★	Gen	217	176	Church	Yes[1]	Lay	1881
William H Coleman Hospital for Women (Affil)★	Mater	64	New	State	Yes	Lay	1927
Jeffersonville 10 098—Clark							
Clark County Memorial Hospital	Gen	36	13	County	No	R N	192[illegible]
Kendallville 4 981—Noble							
Lakeside Hospital	Gen	10	7	Indep	No	R N	1916
Knightstown 1 918—Henry							
Indiana Sailors and Soldiers Orphans Home [2]	Chil	30	25	State	No	M D	1866
Kokomo 38,000—Howard							
Howard County Hospital	Gen	50	40	County	No	Lay	1926
Lafayette, 23 790—Tippecanoe							
Indiana State Soldiers Home Hospital [2]	Gen	250	145	State	No	M D	1895
Lafayette Detention Hosp	Iso	8	1	Cy&Co	No	Lay	1905
Lafayette Home Hospital ▲	Gen	45	38	Indep	Yes[1]	R N	1895
St Elizabeth's Hospital ★▲	Gen	230	135	Church	Yes[1]	R N	1875
Wabash Valley Sanitarium and Hospital ▲	Gen	48	25	Church	Yes[1]	M D	1906
La Porte 17 540—Laporte							
Holy Family Hospital ▲	Gen	96	55	Church	No	Lay	1900
LaPorte County Protestant Hospital	Gen	28	New	Indep	No	Lay	1927
Lebanon 6 257—Boone							
Williams Hospital	Gen	30	10	Indep	Yes	R N	1908
Witham Memorial Hospital	Gen	[illegible]	12	County	No	R N	1916
Linton 5 906—Greene							
Freeman City Hospital	Gen	15	4	City	No	R N	1913
Logansport 23 120—Cass							
Cass County Hospital	Gen	40	22	County	No	R N	1925
Logansport State Hospital	N&M	1 308	1 255	State	No	M D	1888
St Joseph's Hospital	Gen	65	50	Church	No	Lay	1905
Madison 6 711—Jefferson							
King's Daughters Hospital	Gen	[illegible]	11	Church	No	R N	1899
Marion 26 274—Grant							
Grant County Hospital ▲	Gen	45	29	Indep	Yes[1]	R N	1910
Martinsville 4 895—Morgan							
Cohn Bernard Sanitarium	Conv	42	25	Indiv	No	Lay	188[illegible]
Colonial Mineral Springs	Conv	58	49	Indep	No	Lay	
Hill House Sanitarium	Conv	50	5	Indiv	No	M D	18[illegible]
Home Lawn Mineral Springs Sanitarium	Conv	125	100	Indep	No	Lay	1890
Martinsville Sanitarium	Conv	150	75	Indep	No	Lay	1889
Morgan County Memorial Hospital	Gen	30	7	County	No	R N	192[illegible]
Dr Scherer's New Highland Sanitarium and Clinic	Gen	150	75	Part	No	M D	18[illegible]
Whiting Mineral Springs Sanitarium and Bath	Conv	45	30	Part	No	M D	1905
Michigan City 20 299—Laporte							
Indiana Hospital for Insane Criminals	N&M	230	28	State	No	Lay	18[illegible]9
Indiana State Prison Hosp	Gen	82	65	State	No	Lay	1859
The Clinic, Inc and Clinic Hospital	Gen	40	26	Indep	No	M D	1906
St Anthony's Hospital ▲	Gen	100	70	Church	No	Lay	1901
Middletown 1 273—Henry							
Old Folks Home and Orphanage - [3]	Chil	10	3	Church	No	Lay	1884
Milan 718—Ripley							
Milan Springs Sanatorium	Conv	120	42	Part	No	M D	1919
Mishawaka 16 671—St Joseph							
St Joseph Hospital ▲	Gen	80	60	Church	Yes[1]	R N	1910
Muncie 42 491—Delaware							
Isolation Hospital	Iso	12	1	City	No	Lay	1893
La Duron Hospital	Indus	12	8	Indiv	No	M D	1924
Muncie Home Hospital ▲	Gen	68	55	Indep	Yes[1]	R N	1906
National Military Home 2,300—Grant							
Marion National Sanat ▲	N&M	1 092	1 037	Fed	No	M D	1890
New Albany 22,992—Floyd							
St Edward's Hospital ▲	Gen	100	55	Church	No	Lay	1902
New Castle 16 955—Henry							
Indiana Village for Epileptics	Epil	700	600	State	No	M D	1905
Newcastle Clinic Hospital	Gen	16	10	Indep	No	M D	1916

INDIANA—Cont

City Pop—County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt M D R N Lay	Year Est
Noblesville 4 758—Hamilton							
Hamilton County Hospital	Gen	25	15	County	No	Lay	1914
North Madison 309—Jefferson							
Madison State Hospital	N&M	1 424	1 316	State	No	M D	1910
Oaklandon 355—Marion							
Sunnyside Sanatorium	TB	250	175	County	No	M D	1917
Pendleton 1 914—Madison							
Indiana Reformatory	Gen	50	16	State	No	M D	1821
Peru 12 683—Miami							
Dukes Miami County Memorial Hospital	Gen	20	2	County	No	R N	1913
Wabash Railroad Employees Hospital	Indus	50	30	Indus	No	M D	1885
Pierceton 1 016—Kosciusko							
Crissy Home Hospital	Gen	6	1	Indiv	No	M D	
Plainfield 1 873—Hendricks							
Indiana Boys School Hosp [2]	Gen	30	12	State	No	Lay	1867
Plymouth 4 338—Marshall							
Marshall County Hospital	Gen	11	8	County	No	R N	1910
Portland 5 958—Jay							
City Hospital	Gen	12	5	Indep	No	R N	1917
Princeton 7 132—Gibson							
Methodist Episcopal Hosp	Gen	50	15	Church	Yes	R N	1917
Rensselaer 2 912—Jasper							
Jasper County Hospital	Gen	17	14	County	No	Lay	1917
Richmond 30 495—Wayne							
Reid Memorial Hospital ▲	Gen	65	48	Indep	Yes[1]	R N	1905
Richmond State Hospital	N&M	1 122	1 063	State	No	M D	1890
St Luke Hospital	Gen	25	12	Indep	No	R N	
Wernle Orphans Home	Chil	10	1	Church	No	Lay	1879
Rochester 3 720—Fulton							
Woodlawn Hospital	Gen	15	13	Indep	No	R N	1907
Rockville 1 968—Parke							
Indiana State Sanatorium+	TB	160	145	State	No	M D	1907
Rome City 450—Noble							
Kneipp Sanitarium	Gen	200	100	Church	No	M D	1901
Rushville 5 498—Rush							
Frank H Green Hospital	Gen	5	2	Indiv	No	M D	1919
Dr Sexton's Hospital	Gen	14	8	Part	No	M D	1902
Seymour 7 348—Jackson							
Schneck Memorial Hospital	Gen	67	12	Indep	No	R N	1911
Shelbyville 9 701—Shelby							
Major Memorial Hospital	Gen	40	13	City	No	R N	1923
South Bend 80 091—St Joseph							
Epworth Hospital ★▲	Gen	150	91	Indep	Yes[1]	R N	1894
Healthwin Hospital	TB	180	115	County	No	M D	1914
St Joseph Hospital ★▲	Gen	125	82	Church	Yes[1]	R N	1882
South Bend Isolation Hosp	Iso	12	2	Cy & Co	No	M D	1911
Sullivan 4 489—Sullivan							
Mary Sherman Memorial Hospital	Gen	50	23	County	No	R N	1918
Tell City 4 086—Perry							
Parkview Hospital	Gen	10	5	Indiv	No	M D	1923
Terre Haute 71 071—Vigo							
St Anthony's Hospital ★▲	Gen	150	82	Church	Yes[1]	R N	1882
Union Hospital ▲	Gen	178	92	Indep	Yes[1]	M D	1892
Union City 3 496—Randolph							
Union City Hospital	Gen	15	8	Indiv	No	R N	1913
Valparaiso 6 518—Porter							
Christian Hospital	Gen	20	2	Indep	No	R N	1890
Vincennes 18 271—Knox							
Good Samaritan Hospital	Gen	92	50	County	Yes[1]	R N	1908
Wabash 9 872—Wabash							
Wabash County Hospital	Gen	35	15	County	No	R N	1921
Warsaw 5 472—Kosciusko							
McDonald Hospital	Gen	18	10	Part	No	R N	1912
Washington 8 705—Daviess							
Daviess County Hospital	Gen	50	25	County	No	R N	1914
West Baden 832—Orange							
West Baden Springs Hotel Clinic	Gen	50	25	Indiv	No	M D	1925
Winchester 4 021—Randolph							
Randolph County Hospital	Gen	20	12	County	No	R N	1920

Total registered hospitals in Indiana 155 capacity 19 573 average census 14 730 Hospitals not admitted to the register 23 capacity 375

IOWA

City Pop—County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt M D R N Lay	Year Est
Ackley 1 476—Hardin							
Miller Hospital	Gen	6	3	Indiv	No	M D	1916
Akron 1 324—Plymouth							
Akron Hospital	Gen	20	12	Indiv	No	R N	1910
Albia 5 067—Monroe							
Miner's Hospital	Gen	35	20	Indiv	Yes	R N	1912
Algona 3 724—Kossuth							
Algona Hospital	Gen	12	6	Indiv	Yes	R N	1907
Allerton 928—Wayne							
Parker Hospital	Gen	7	3	Indiv	No	R N	1920
Alta 1 090—Buena Vista							
Alta Hospital	Gen	15	8	Indep	No	G N	1912
Ames 6 270—Storey							
Iowa State College Hosp ▲	Gen	100	30	State	No	R N	1886
Anamosa 2 881—Jones							
Mercy Hospital	Gen	35	20	Church	Yes[1]	R N	1893
Reformatory Hospital	Gen	25	8	State	No	Lay	1874
Atlantic 5 329—Cass							
Atlantic Hospital	Gen	34	25	Indep	Yes[1]	R N	1903
C R Jones Hospital	Gen	40	20	Indiv	No	M D	1912
Battle Creek 785—Ida							
New Battle Creek Hospital and Sanitarium	Gen	16	12	Indiv	No	R N	1916
Bellevue 1 603—Jackson							
Moulton Hospital	Gen	20	10	Indiv	No	M D	1919
Belmond 1 730—Wright							
Belmond Hospital	Gen	8	4	Indiv	No	M D	1915
Bettendorf 2 503—Scott							
Masonic Sanitarium	Conv	50	New	Frat	No	Lay	1927
IOWA—Cont							
Boone 12 663—Boone							
Eleanor Moore Hospital	Gen	50	25	County	No	R N	1909
Burlington 26 375—Des Moines							
Burlington Protestant Hospital ★	Gen	105	80	Church	Yes[1]	R N	1897
Des Moines County Asylum	N&M	66	60	County	No	Lay	[illegible]
Mercy Hospital	Gen	40	30	Church	Yes[1]	Lay	[illegible]
St Francis Hospital	Gen	50	31	Church	No	Lay	1885
Carroll 4 254—Carroll							
St Anthony's Hospital	Gen	100	50	Church	Yes[1]	R N	1905
Cedar Falls 6 316—Blackhawk							
Sartori Memorial Hospital	Gen	21	15	City	No	R N	1914
Cedar Rapids 53 100—Linn							
Mercy Hospital ★	Gen	200	82	Church	Yes[1]	Lay	1900
St Luke's Methodist Hosp ★	Gen	175	76	Church	Yes[1]	Lay	1884
Centerville 8 483—Appanoose							
St Joseph Hospital	Gen	44	24	Church	Yes[1]	R N	1903
Chariton 5 175—Lucas							
Dr Yocum's Hospital	Gen	20	10	Indiv	No	M D	1900
Charles City 7 350—							
Cedar Valley Hospital	Gen	24	14	City	No	R N	1914
Cherokee 4 552—Cherokee							
Cherokee State Hospital	N&M	1 380	1 140	State	Yes	M D	1902
Sioux Valley Hospital	Gen	35	11	Indep	Yes[1]	R N	1917
Clarinda 4 511—Page							
Clarinda State Hospital	N&M	1 200	1 100	State	Yes	M D	1885
Clarion 2 826—Wright							
Dr Sams Private Hospital	Gen	5	1	Indiv	No	Lay	1917
Tompkins and Walker Hosp	Gen	10	4	Part	No	M D	1919
Clinton 26 436—Clinton							
Clinton Isolation Hospital	Iso	9	1	City	No	M D	1913
Jane Lamb Memorial Hosp	Gen	90	62	Indep	Yes[1]	R N	1885
St Joseph's Mercy Hospital	Gen	62	40	Church	Yes[1]	R N	1884
Colfax 2 504—Jasper							
Colfax Sanit and Hosp	Gen	26	18	Indiv	No	M D	1914
Council Bluffs 36 162—Pottawattamie							
Christian Home Orphanage	Chil	19	12	Indep	No	Lay	1882
City Isolation Hospital	Iso	12	2	City	No	Lay	1904
Iowa School for the Deaf	Gen	26	5	State	No	Lay	1855
Jennie Edmundson Memorial Hospital ★▲	Gen	100	75	Indep	Yes[1]	Lay	1884
Mercy Hospital ▲	Gen	125	97	Church	Yes[1]	Lay	1903
St Bernard's Hospital	N&M	240	204	Church	No	Lay	1887
Cresco 3 195—Howard							
St Joseph's Mercy Hospital	Gen	30	12	Church	No	Lay	1911
Creston 8 034—Union							
Greater Community Hosp	Gen	50	24	Indep	Yes[1]	Lay	1894
Davenport 56 727—Scott							
Iowa Soldiers Orphans Home [2]	Chil	20	20	State	No	Lay	1865
Mercy Hospital ★▲	Gen	125	77	Church	Yes[1]	Lay	1869
Pine Knoll Sanitarium	TB	84	48	County	No	M D	1915
St Luke's Hospital ▲	Gen	75	60	Church	Yes[1]	R N	1895
Decorah 4 039—Winneshiek							
Decorah Hospital	Gen	20	8	Church	No	R N	1914
Denison 3 591—Crawford							
Denison Hospital	Gen	15	1	Indiv	No	R N	1904
Des Moines 126 468—Polk							
Benedict Home	Mater	30	12	Indep	No	Lay	1882
Broadlawns Polk County Public Hosp (Cont dept)	Iso	30	2	County	Yes	M D	1902
Broadlawns Polk County Public Hospital ★▲	Gen	100	90	County	Yes[1]	M D	1901
Broadlawns Polk County Public Hosp (TB dept)	TB	100	79	County	Yes	M D	1924
Iowa Lutheran Hospital ★▲	Gen	150	118	Church	Yes[1]	Lay	1914
Iowa Lutheran Maternity Hospital	Mater	37	25	Church	Yes	Lay	1917
Iowa Methodist Hospital ★▲	Gen	239	113	Church	Yes[1]	Lay	1901
Mercy Hospital ★▲	Gen	148	99	Church	Yes[1]	R N	1895
Polyclinic Hospital	Gen	60	40	Indep	No	M D	1923
The Retreat	N&M	50	35	Indep	No	M D	1905
Salvation Army Rescue Home & Maternity Hosp	Mater	25	10	Church	No	Lay	1899
Dubuque 40 996—Dubuque							
Finley Hospital ▲	Gen	90	55	Indep	Yes[1]	Lay	1890
St Joseph's Mercy Hosp ▲	Gen	100	58	Church	Yes[1]	R N	1879
St Joseph Sanitarium	N&M	225	175	Church	No	Lay	1895
Sunny Crest Sanatorium	TB	55	50	County	No	M D	1921
Eldora 3 189—Hardin							
Eldora Booth Memorial Hospital	Gen	18	3	Indep	No	M D	1921
Iowa Training School for Boys [2]	Gen	24	8	State	No	Lay	1868
Elkader 1 223—Clayton							
Clayton County Hospital for Insane	N&M	50	47	County	No	Lay	1895
Emmetsburg 2 688—Palo Alto							
Palo Alto Hospital	Gen	10	6	Indep	No	R N	1921
Estherville 4 699—Emmett							
Birney Hospital	Gen	15	10	Indiv	No	M D	1919
Coleman Hospital	Gen	50	19	Indiv	Yes[1]	R N	1916
Fairfield 5 948—Jefferson							
Jefferson County Hospital	Gen	29	20	County	Yes[1]	R N	1912
Ft Des Moines 700—Polk							
Station Hospital	Gen	41	20	Army	No	M D	1900
Ft Dodge 19 347—Webster							
Boulder Lodge Sanatorium	TB	15	10	Indiv	No	M D	1895
St Joseph's Mercy Hosp ▲	Gen	112	51	Church	Yes[1]	R N	1908
Ft Madison 12 065—Lee							
Atchison Topeka & Sante Fe Railway Hospital ▲	Indus	40	21	Indus	No	M D	1885
Iowa State Penitentiary Hospital [2]	Gen	28	20	State	No	Lay	1895
Sacred Heart Hospital	Gen	75	50	Church	No	Lay	1912
Glenwood 2 614—Mills							
Iowa Institution for Feeble-minded Children	FeMi	1 650	1 589	State	No	M D	1876
Goldfield 726—Wright							
Goldfield Hospital	Gen	5	2	Indiv	No	R N	1919

IOWA—Cont City Pop—County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt M D R N Lay	Year Est
Grinnell 5 362—Poweshiek							
Grinnell Community Hosp	Gen	54	18	Indep	Yes[1]	R N	1918
St Francis Hospital	Gen	35	15	Church	No	Lay	1920
Hamburg 1 817—Fremont							
Hamburg Hospital	Gen	12	5	Indiv	No	R N	1921
Harlan 2,811—Shelby							
Harlan Hospital	Gen	9	5	Indiv	No	R N	1926
Hartley 1 306—O Brien							
Hand Hospital	Gen	12	4	Indiv	No	Lay	1909
Howarden 2,491—Sioux							
Howarden Hospital	Gen	10	5	Part	No	M D	1911
Holstein 1 372—Ida							
Holstein Hospital	Gen	10	2	Indiv	No	M D	1912
Hull 791—Sioux							
Hull Hospital	Gen	15	6	Indep	No	M D	1921
Ida Grove 2 020—Ida							
Ida Grove General Hospital	Gen	12	5	Part	No	R N	1919
Independence 3 673—Buchanan							
Independence State Hospital	N&M	1 479	1 413	State	Yes	M D	1868
Peoples Hospital of Buchanan County	Gen	28	12	Indep	No	R N	1917
Iowa City 11 267—Johnson							
Iowa State Psychopathic Hospital	N&M	60	38	State	Yes	M D	1919
Mercy Hospital ▲	Gen	100	45	Church	Yes[1]	R N	1878
Rohrbacher Sanitarium	Gen	8	5	Indiv	No	M D	1920
University Hospital ★▲	Gen	683	645	State	Yes[1]	M D	1870
Iowa Falls 3 945—Hardin							
Ellsworth Hospital	Gen	20	7	City	No	R N	1902
Jefferson 3 133—Greene							
Jefferson Hospital	Gen	10	3	Indiv	No	Lay	1916
Keokuk 14 423—Lee							
W C Graham Protestant Hospital	Gen	40	25	Church	Yes[1]	R N	1901
St Joseph's Hospital	Gen	90	60	Church	Yes[1]	R N	1882
Knoxville 3 801—Marion							
United States Veterans Hospital No 57▲	N&M	586	491	VetBur	No	M D	1920
Lake City, 3 110—Calhoun							
McCrary Hospital	Gen	25	6	Part	No	M D	1918
Le Mars 4 683—Plymouth							
Community Hospital	Gen	26	14	Indiv	No	R N	1920
Sacred Heart Hospital	Gen	50	26	Church	Yes[1]	Lay	1917
Leon 1 990—Decatur							
Leon Hospital	Gen	6	2	Part	No	Lay	1918
Manchester 3 111—Delaware							
Manchester Hospital	Gen	10	4	Indiv	No	M D	1918
Manning 1 710—Carroll							
Wyatt Hospital	Gen	20	8	Indiv	No	M D	
Maquoketa 3 643—Jackson							
City Memorial Hospital	Gen	20	9	Part	No	Lay	1925
Marengo 2,048—Iowa							
Mineral Springs Hospital and Sanitarium	Gen	15	8	Indep	Yes	Lay	1915
Marshalltown 15 731—Marshall							
Evangelical Deaconess Home and Hospital	Gen	125	54	Church	Yes[1]	Lay	1913
Iowa Soldiers Home Hosp	Gen	300	133	State	No	M D	1887
Mercy Hospital	Gen	60	32	Church	Yes[1]	R N	1902
Singleton Hospital	EENT	10	4	Indiv	No	M D	1902
Mason City 22 682—Cerro Gordo							
Iowa Odd Fellows and Orphans Home Hospital	Chil	16	9	Frat	No	Lay	1924
Park Hospital ▲	Gen	50	37	Indep	Yes[1]	R N	1910
St Joseph's Mercy Hosp ▲	Gen	65	40	Church	Yes[1]	R N	1916
Story Hospital	Gen	12	6	Part	Yes	R N	1901
McGregor 1 239—Clayton							
McGregor Hospital and Sanatorium	Gen	14	8	Indiv	No	M D	1900
Milford 1 103—Dickinson							
Milford Hospital	Gen	6	2	Indiv	No	M D	1908
Monticello 2 257—Jones							
John McDonald Hospital	Gen	29	20	Indep	Yes[1]	R N	1916
Mt Pleasant 4 445—Henry							
Henry County Soldiers and Sailors Memorial Hospital	Gen	20	14	County	No	R N	1920
Mt Pleasant State Hospital	N&M	1 350	1 300	State	Yes	M D	1850
Muscatine 16 068—Muscatine							
Bellevue Hospital	Gen	30	14	Indep	Yes	R N	1905
Benjamin Hershey Memorial Hospital	Gen	50	21	Indep	Yes	R N	1902
Nevada 2 668—Storey							
Iowa Sanitarium and Hosp	Gen	0	28	Church	Yes	M D	1899
New Hampton 2 539—Chickasaw							
St Joseph's Hospital	Gen	50	35	Church	No	Lay	1917
Newton 6 627—Jasper							
City Hospital	Gen	60	19	City	No	R N	1917
Oakdale 52—Johnson							
State Sanatorium for Treatment of Tuberculosis	TB	398	283	State	No	M D	1908
Odebolt 1 445—Sac							
Odebolt Hospital	Gen	9	3	Indiv	No	R N	1922
Oelwein, 7 455—Fayette							
Mercy Hospital	Gen	35	16	Church	No	R N	1926
Onawa 2 013—Monona							
Onawa Hospital	Gen	10	5	Indiv	No	M D	1923
Orange City 1 620—Sioux							
De Bey Hospital	Gen	10	3	Part	No	M D	1912
Osage 2 953—Mitchell							
Nissen Hospital	Gen	9	4	City	No	Lay	
Savre Hospital	Gen	7	4	Part	No	M D	1907
Osceola 2 648—Clarke							
Harken Hospital	Gen	20	14	Indiv	No	Lay	1911
Osceola Hospital	Gen	15	5	Part	No	Lay	1902
Osceola Sanitarium & Hosp	Gen	15	5	Indiv	No	M D	1900
Oskaloosa 9 427—Mahaska							
Mercy Hospital	Gen	35	14	Part	Yes[1]	Lay	1909
Ottumwa 23 003—Wapello							
Ottumwa Hospital	Gen	54	42	Indep	Yes[1]	Lay	1894
St Joseph Hospital ▲	Gen	76	40	Church	Yes[1]	Lay	1914
Sunny Slope Sanatorium	TB	50	45	County	No	Lay	1916
Perry 5 642—Dallas							
Kings Daughters Hospital	Gen	22	18	Church	No	R N	1915
Postville 1 039—Allamakee							
Postville Hospital	Gen	21	10	Indiv	No	M D	1911
Primghar 991—O Brien							
Ward Memorial Hospital	Gen	8	2	Indiv	No	Lay	1915
Red Oak 5 578—Montgomery							
Powell School for Backward and Nervous Children	N&M	50	35	Part	No	M D	1903
Red Oak Clinical Hospital	Gen	30	8	Part	No	R N	1914
Rock Valley 1 327—Sioux							
Rock Valley Hospital	Gen	10	1	Indiv	No	Lay	1916
Saylor, 25—Polk							
Polk County Hospital for Insane	N&M	160	120	County	No	M D	1879
Sheldon 3 488—O Brien							
Cram Hospital	Gen	14	4	Indiv	No	R N	1902
Myers Hospital	Gen	20	5	Indiv	No	M D	1920
Samaritan Hospital	Gen	10	5	Part	No	R N	1914
Shenandoah 5 255—Page							
Henry and Catherine Hand Hospital	Gen	30	20	Indep	Yes	R N	1918
Sibley 1 803—Osceola							
Osceola Hospital	Gen	18	8	Part	No	R N	1914
Sibley Hospital	Gen	13	7	Part	No	M D	1902
Sigourney 2 210—Keokuk							
Sigourney Hospital	Gen	11	4	Indiv	No	M D	1921
Sioux City 71 227—Woodbury							
City Detention Hospital of Sioux City	Iso	20	10	Cy&Co	No	R N	1905
Lutheran Hospital ▲	Gen	76	48	Church	Yes[1]	R N	1902
Methodist Hospital ▲	Gen	110	78	Church	Yes[1]	Lay	1920
St Joseph's Mercy Hosp ★▲	Gen	175	100	Church	Yes[1]	R N	1890
St Vincent's Hospital ▲	Gen	125	58	Church	Yes[1]	R N	1907
Sioux City Maternity Hosp	Mater	28	10	Indep	Yes	R N	1909
Spencer 4 599—Clay							
Spencer Hospital	Gen	10	7	Indep	No	R N	1915
Stacyville 579—Mitchell							
Smith Hospital	Gen	7	3	Indiv	No	M D	1926
Stanton 669—Montgomery							
Dr W A Howard's Hosp	Gen	7	3	Indiv	No	M D	1922
Storm Lake 3 658—Buena Vista							
Swallum Hospital	Gen	25	9	Indiv	No	M D	1910
Story City 1 459—Storey							
Old Peoples Home and Hospital	Gen	6	2	Church	No	Lay	1914
Tipton 2 109—Cedar							
Tipton Hospital	Gen	6	3	Indiv	No	M D	1923
Toledo 1 639—Tama							
Iowa State Juvenile Home[2]	Chil	10	3	State	No	Lay	1920
Sac and Fox Tuberculosis Sanatorium	TB	80	79	Indian	No	M D	1913
Vinton, 3 381—Benton							
Iowa School for the Blind[2]	Gen	20	8	State	No	Lay	1853
Washington 4 697—Washington							
Washington County Hosp	Gen	50	15	County	Yes[1]	R N	1912
Waterloo 36 771—Blackhawk							
Allen Memorial Hospital	Gen	47	31	Church	Yes[1]	Lay	1925
Convalescent Home	Conv	6	3	Part	No	R N	1924
St Francis Hospital ▲	Gen	73	65	Church	No	R N	1912
Synodical Presbyterian Hospital	Gen	50	28	Church	Yes[1]	R N	1904
Waukon 2 662—Allamakee							
Rominger and Jeffries Emergency Hospital	Gen	6	3	Part	No	M D	1912
Hall Hospital	Mater	6	1	Indiv	No	Lay	1918
Waverly 3 352—Bremer							
St Joseph's Hospital ▲	Gen	50	25	Church	Yes[1]	Lay	1901
Webster City 5 657—Hamilton							
St Joseph's Mercy Hospital	Gen	25	12	Church	No	R N	1907
West Union 1 777—Fayette							
West Union Community Hospital	Gen	20	10	City	No	R N	1915
Williamsburg 1 251—Iowa							
Watts Hospital	Gen	25	15	Indiv	No	M D	1916
Winterset 3 063—Madison							
Winterset Hospital	Gen	15	6	Indiv	No	Lay	1921
Woodward *984—Dallas*							
State Hospital and Colony for Epileptics	Epi	786	359	State	No	M D	1917

Total registered hospitals in Iowa 183 capacity 17 433 average census 13 066 Hospitals not admitted to the register 14 capacity 416

KANSAS

City Pop—County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt M D R N Lay	Year Est
Abilene, 4 895—Dickinson							
Dickinson County Memorial Hospital	Gen	26	9	Indep	No	R N	1923
Anthony 2 740—Harper							
Anthony Hospital	Gen	5	2	Indiv	No	Lay	1906
Galloway Hospital	Gen	20	15	Indiv	No	M D	1923
Arkansas City 14 003—Cowley							
Mercy Hospital	Gen	45	20	Indep	Yes[1]	R N	1904
Atchison 15 028—Atchison							
Atchison Hospital	Gen	25	17	Indep	No	R N	1914
Dell Memorial Hospital -	Chil	16	10	State	No	Lay	1920
Prospect Park Sanitarium	N&M	30	20	Indiv	No	Lay	1889
Atwood 919—Rawlins							
Henneberger Hospital	Gen	12	5	Indiv	No	M D	1919
Augusta 4 219—Butler							
Augusta Hospital	Gen	22	8	Indiv	No	M D	1920
Belleville, 2 254—Republic							
R G Patterson Memorial Hospital	Gen	25	8	Church	Yes[1]	R N	1923
Beloit 3,315—Mitchell							
Beloit Hospital	Gen	12	1	Indiv	No	R N	1912

KANSAS—Cont

City Pop—County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt M D R N Lay	Year Est
Bonner Springs 1 626—Wyandott							
Bonner Springs Sanitarium	N&M	25	15	Indiv	Yes	M D	1890
Chanute 9 579—Neosho							
Johnson Hospital	Gen	35	20	Indep	Yes¹	R N	1906
Cherryvale 4 216—Montgomery							
Norman Hospital	Gen	10	4	Indiv	No	M D	1920
Coffeyville 16 [illegible]—Montgomery							
Coffeyville General Hospital	Gen	10	5	Indiv	No	R N	1921
South East Kansas Hosp	Gen	24	9	Indep	Yes¹	R N	1914
Columbus 3 1[illegible]—Cherokee							
Maud Norton Memorial City Hospital	Gen	15	6	City	No	R N	1917
Concordia 4 70[illegible]—Cloud							
Concordia Hospital	Gen	35	15	Church	Yes¹	Lay	1919
St Joseph's Hospital ▲	Gen	75	35	Church	Yes¹	R N	1903
Council Grove 2 857—Morris							
Council Grove Hospital	Gen	10	6	Part	No	R N	1916
Dodge City 6 061—Ford							
McCarty Hospital	Gen	25	12	Part	Yes	M D	1903
St Anthony's Hospital	Gen	50	40	Church	Yes¹	Lay	1908
Eldorado 9 500—Butler							
St Luke's Hospital ▲	Gen	45	19	Church	Yes¹	R N	1921
Elkhart 1 138—Morton							
Elkhart Hospital	Gen	12	2	Indep	No	R N	1921
Ellsworth 2 065—Ellsworth							
Ellsworth Hospital	Gen	41	10	Indep	Yes¹	R N	1897
Mother Bickerdyke Home and Hospital ²	Gen	37	32	State	No	Lay	1892
Emporia 12 943—Lyon							
Newman Memorial County Hospital	Gen	74	46	County	Yes¹	R N	1922
St Mary's Hospital	Gen	24	10	Church	No	Lay	1883
Esbon 344—Jewell							
Esbon Hospital	Rectal	20	10	Indiv	No	M D	1918
Ft Dodge 515—Ford							
Kansas State Soldiers Home Hospital ³	Gen	30	12	State	No	Lay	1866
Ft Leavenworth 5 012—Leavenworth							
Station Hospital	Gen	125	45	Army	No	M D	1827
United States Disciplinary Barracks Hospital	Gen	140	86	Army	No	M D	1876
Ft Riley 2,550—Geary							
Station Hospital	Gen	100	35	Army	No	M D	1853
Ft Scott 11 763—Bourbon							
Ft Scott Hospital	Gen	50	40	Indep	Yes¹	R N	1922
Mercy Hospital	Gen	60	40	Church	Yes¹	Lay	1887
Garden City 3 838—Finney							
Bailey Hospital	Gen	10	8	Indiv	No	R N	1915
Drs Rewerts & Miner Hosp	Gen	12	8	Part	No	Lay	1902
Girard 3 102—Crawford							
Girard General Hospital	Gen	10	6	City	No	R N	1916
Goessel 80—Marion							
Mennonite Bethesda Hosp	Gen	30	18	Church	Yes¹	R N	1899
Goodland 2 664—Sherman							
Goodland Methodist Hosp	Gen	25	10	Church	Yes¹	R N	1923
Great Bend 4 460—Barton							
St Rose Hospital ▲	Gen	50	40	Church	Yes¹	Lay	1903
Halstead 1 063—Harvey							
Halstead Hospital ▲	Gen	140	65	Indep	Yes¹	M D	1904
Hays 3 165—Ellis							
Hays Protestant Hospital	Gen	35	[illegible]	Church	Yes¹	R N	1923
St Anthony's Hospital ▲	Gen	50	42	Church	No	R N	1909
Herington 4 065—Dickinson							
Herington Hospital	Gen	13	7	Indiv	No	R N	1919
Hillsboro 1 451—Marion							
Salem Home and Hospital	Gen	35	14	Church	Yes¹	R N	1889
Hoisington 2 395—Barton							
Atkin Hospital	Gen	17	11	Indiv	No	M D	1912
Horton 4 009—Brown							
Horton Hospital	Gen	16	8	Indiv	No	M D	1906
Hutchinson 23 970—Reno							
Grace Methodist Hospital ▲	Gen	95	45	Church	Yes¹	R N	1915
St Elizabeth's Mercy Hosp ▲	Gen	65	32	Church	Yes¹	Lay	1920
Independence 10 990—Montgomery							
Johnson Hospital and Clinic	Gen	15	8	Indep	Yes¹	R N	1924
Mercy Hospital	Gen	35	10	Church	Yes¹	R N	1910
Junction City 7 533—Geary							
Junction City Municipal Hospital	Gen	26	8	City	Yes¹	R N	1921
Kansas City 116 053—Wyandotte							
Bell Memorial Hospital ★▲	Gen	112	98	State	Yes¹	M D	1906
Bethany Methodist Hospital	Gen	120	99	Church	Yes¹	M D	1892
Douglass Hospital	Gen	25	14	Church	Yes	M D	1898
Grandview Sanitarium	N&M	38	22	Indiv	No	M D	1903
Providence Hospital ▲	Gen	65	50	Church	Yes¹	R N	1920
St Margaret's Hospital ★▲	Gen	300	189	Church	Yes	Lay	1887
Kingman 2 407—Kingman							
Kingman Hospital	Gen	14	8	Part	Yes¹	R N	1915
Lansing 812—Leavenworth							
State Hospital for Dangerous Insane	N&M	70	70	State	No	M D	1911
Larned 3 139—Pawnee							
Larned Hospital	Gen	20	10	Indep	Yes¹	R N	1905
Larned State Hospital	N&M	634	605	State	No	M D	1914
Lawrence 12 341—Douglas							
Haskell Institute Hospital School	Gen	54	6	Indian	Yes	Lay	1884
Kansas University Students Hospital and Dispensary ²	Gen	22	8	State	No	M D	1908
Lawrence Hospital	Gen	30	11	Indep	Yes¹	R N	1903
Lawrence Memorial Hospital	Gen	25	17	City	No	R N	1920
McConnell Hospital	Gen	25	7	Indep	Yes¹	Lay	1920
Simmons Hospital ³	Gen	14	8	Indiv	No	Lay	1903
Leavenworth 20,889—Leavenworth							
County Hospital	Gen	82	68	County	No	Lay	1914
Cushing Hospital	Gen	20	10	Church	Yes¹	R N	1872
Elmwood Hospital	N&M	25	15	Indiv	No	Lay	1883
St John's Hospital	Gen	50	23	Church	Yes	Lay	1865
United States Penitentiary Hospital ²	Gen	100	75	Federal	No	Lay	1893
Lebanon 822—Smith							
Lebanon Hospital	Gen	10	3	Indiv	No	M D	1908
Liberal 3 613—Seward							
Epworth Hospital	Gen	32	22	Church	Yes¹	R N	1916
Lincoln 1 613—Lincoln							
Lincoln Hospital	Gen	6	5	Indiv	No	R N	1903
Little River 719—Rice							
Hoffman Memorial Hosp	Gen	15	10	City	Yes¹	M D	1915
Lyons 2 516—Rice							
Lyons Hospital	Gen	16	7	Indep	No	R N	1917
Manhattan 7 989—Riley							
Charlotte Swift Memorial Hospital	Gen	40	13	Indep	Yes¹	M D	1915
Park View Hospital	Gen	6	12	Indep	Yes¹	Lay	1903
Marion 1 928—Marion							
Marion Hospital	Gen	10	4	Indep	No	Lay	1915
Marysville 3 018—Marshall							
Mary Marshall Hospital	Gen	12	3	Indiv	No	R N	1920
Moline 950—Elk							
Moline Hospital	Gen	15	5	Indep	Yes	M D	1914
Mulvane 1 002—Sumner							
Atchison Topeka & Sante Fe Railway Hospital	Indus	60	24	Indus	No	M D	1913
Nashville 201—Kingman							
Nashville Hospital	Gen	15	7	Indiv	No	M D	1924
National Military Home 2 510—Leavenworth							
National Military Home for Disabled Volunteer Soldiers ▲	Gen	351	306	Federal	No	M D	1885
Newton 9 781—Harvey							
Axtell Christian Hospital ▲	Gen	50	30	Indep	Yes¹	Lay	1887
Bethel Deaconess Home and Hospital	Gen	47	35	Church	Yes¹	Lay	1908
Norton 2 186—Norton							
Norton Methodist Hospital	Gen	20	15	Church	Yes¹	R N	1918
State Sanatorium for Tuberculosis	TB	140	98	State	No	M D	1913
Olathe 3 372—Johnson							
State School for the Deaf	Gen	[illegible]	6	State	No	Lay	1864
Osawatomie 3 560—Miami							
Osawatomie State Hosp +	N&M	1 400	1 400	State	Yes	M D	1863
Osborne 1 675—Osborne							
Nye Hospital	Gen	10	3	Indiv	No	M D	1915
Ottawa 9 018—Franklin							
Ottawa Community Hosp	Gen	20	10	Indep	No	R N	1914
Santa Fe Hospital	Indus	40	25	Indus	No	M D	1927
Parsons 14 839—Labette							
Mercy Hospital	Gen	59	8	Church	Yes¹	R N	1911
Missouri Kansas and Texas Railroad Hospital	Indus	75	45	Indus	No	R N	192
Parsons Hospital and Maternity Home	Gen	10	7	Indiv	No	R N	1921
State Hospital for Epileptics	Epi	638	593	State	No	M D	1903
C T Wood's Memorial Hospital	Gen	20	8	Indiv	Yes¹	M D	1922
Pittsburg 19 182—Crawford							
Mt Carmel Hospital ▲	Gen	75	40	Church	Yes¹	R N	1903
Pratt 5 111—Pratt							
Ninnescah Hospital	Gen	20	14	Indep	Yes¹	R N	1919
Sabetha 2 003—Nemaha							
St Anthony Murdock Memorial Hospital ▲	Gen	50	30	Church	Yes	R N	1904
Salina 15 624—Salina							
Asbury Protestant Hospital	Gen	27	20	Church	Yes¹	Lay	1921
St John's Hospital ▲	Gen	55	50	Church	Yes¹	R N	1914
Scott City 1 273—Scott							
McGinnis and Deal Hospital	Gen	12	8	Indiv	No	R N	1921
Smith Center 1 568—Smith							
Funk's Private Hospital	Gen	10	4	Indiv	No	M D	1914
Spearville 538—Ford							
Perkins Hospital	Gen	10	6	Indep	No	M D	1914
Sterling 2 060—Rice							
Sterling Hospital	Gen	20	8	Indep	Yes¹	M D	1922
Topeka 55 411—Shawnee							
Atchison Topeka and Santa Fe Railway Hospital ▲	Indus	100	80	Indus	No	Lay	1886
Boys Industrial School ²	Chil	24	10	State	No	M D	1879
Christ's Hospital ▲	Gen	80	45	Church	Yes¹	R N	1882
Hillcrest Sanatorium	TB	40	35	Cy&Co	No	Lay	1913
Jane C Stormont Hosp ▲	Gen	73	45	Indep	Yes¹	R N	1886
Menninger Psychiatric Hospital and Sanitarium	N&M	40	17	Indep	No	Lay	1925
Methodist Episcopal Home for the Aged ²	Gen	14	6	Church	No	Lay	1904
Nellie Johns Memorial Hosp	Gen	20	12	State	Yes	Lay	1922
St Francis Hospital ▲	Gen	75	48	Church	Yes¹	Lay	1909
Security Benefit Hospital	Gen	65	45	Frat	No	M D	1925
Topeka State Hospital	N&M	1 088	1 073	State	No	M D	1875
Wamego 1 554—Pottawatomie							
Genn Hospital	Gen	15	6	City	No	R N	1921
Wellington 7 048—Sumner							
Hatcher Hospital ▲	Gen	30	18	Indiv	No	M D	1915
St Luke's Hospital	Gen	20	8	Indep	No	R N	1910
Wichita 88 367—Sedgwick							
Coffman Hospital	Gen	20	9	Indiv	Yes	R N	1919
Kansas Masonic Home	Gen	20	13	Frat	No	Lay	1892
St Francis Hospital ★	Gen	240	155	Church	Yes¹	R N	1889
Salvation Army Home and Hospital	Mater	9	4	Church	No	Lay	1921
Sedgwick County Tuberculosis Sanatorium	TB	[illegible]	25	County	No	R N	1916
Wesley Hospital ★▲	Gen	189	128	Church	Yes¹	Lay	1912
Wichita Children's Home ²	Chil	25	10	Indep	No	Lay	1888
Wichita Hospital ★	Gen	100	80	Indep	Yes¹	Lay	1878
Wichita Sanitarium	Gen	60	40	Church	Yes¹	M D	1903

KANSAS—Cont City Pop—County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt MD RN Lay	Year Est
Winfield 7 933—Cowley							
State Training School	Gen	60	40	State	No	Lay	1881
St Mary's Hospital ▲	Gen	44	37	Church	Yes[1]	R N	1903
William Newton Memorial Hospital ▲	Gen	50	30	City	Yes	R N	1927

Total registered hospitals in Kansas 136 capacity 10 153 average census 7 886 Hospitals not admitted to the register 21 capacity 378

KENTUCKY City Pop—County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt MD RN Lay	Year Est
Anchorage 447—Jefferson							
Louisville and Jefferson County Children's Home	Chil	20	5	Cy&Co	No	Lay	1865
Annville 121—Jackson							
Annville Institute Infirmary	Conv	8	2	Church	No	R N	1917
Ashland 24 455—Boyd							
Baptist General Hospital	Gen	65	40	Church	Yes[1]	Lay	1920
King's Daughters Hospital	Gen	40	15	Church	Yes[1]	R N	1899
Barbourville 1 877—Knox							
Logan Hospital	Gen	20	5	Indiv	No	M D	1922
Berea 1 640—Madison							
Berea College Hospital	Gen	50	24	Indep	Yes[1]	R N	1898
Bowling Green 9 638—Warren							
City Hospital	Gen	47	20	City	Yes[1]	R N	1927
Covington 58 309—Kenton							
Kenton County Infirmary	Gen	40	15	County	No	Lay	1907
St Elizabeth's Hospital ★▲	Gen	300	222	Church	Yes	Lay	1860
William Booth Memorial Hospital ▲	Gen	94	41	Church	Yes[1]	Lay	1915
Cynthiana 3 857—Harrison							
Harrison Memorial Hospital	Gen	35	15	Indep	Yes[1]	R N	1907
Kentucky School for Deaf	Gen	18	5	State	No	Lay	1823
Dayton 7 646—Campbell							
Speer's Memorial Hospital ▲	Gen	95	75	County	Yes[1]	R N	1897
Earlington 3 652—Hopkins							
West Kentucky Hospital	Indus	10	4	Indus	No	M D	1896
Eddyville 1 182—Lyon							
Kentucky Penitentiary Hospital	Gen	24	5	State	No	M D	1884
Eminence 1 317—Henry							
Odd Fellows and Rebekah Home -	Gen	5	2	Frat	No	Lay	1916
Erlanger 711—Kenton							
Highway Medical Hospital[3]	Gen	25	8	Indiv	No	Lay	1925
Fleming 887—Letcher							
Fleming Hospital	Indus	10	4	Indus	No	M D	1914
Ft Thomas 5 028—Campbell							
Station Hospital	Gen	43	33	Army	No	M D	1890
Frankfort 9 805—Franklin							
Kentucky State Reformatory Hospital	Gen	100	35	State	No	M D	1836
King's Daughters Hospital	Gen	30	19	Church	No	R N	1903
State Institution for Feeble Minded Children	N&M	455	400	State	No	M D	1861
Winnie Annett Scott Memorial Hospital	Gen	10	8	Indep	No	R N	1915
Franklin 3 154—Simpson							
Southern Kentucky Sanat	Gen	50	25	Indiv	No	M D	1908
Frenchburg 270—Menifee							
Frenchburg Hospital	Gen	17	1	Church	No	M D	1915
Georgetown 3 903—Scott							
John Graves Ford Memorial Hospital	Gen	30	12	Indep	No	R N	1916
Glasgow 2,559—Barren							
Maplewood Infirmary	Gen	12	6	Indiv	No	R N	1914
Gray Hawk 19—Jackson							
Mary Allen Memorial Hosp	Mater	10	5	State	No	M D	1913
Grayson 825—Carter							
J Q Stovall Memorial Hospital	Gen	7	New	Indiv	No	M D	
Greendale 80—Fayette							
Kentucky House of Reform	Gen	24	10	State	No	Lay	1909
Harlan 2 647—Harlan							
Harlan Hospital	Gen	50	30	Indep	No	R N	1915
Harrodsburg 3 765—Mercer							
A D Price Memorial Hosp	Gen	25	9	Indep	No	R N	1912
Hazard 4 348—Perry							
Hazard Hospital	Gen	37	14	Indep	No	M D	1919
Henderson 12 574—Henderson							
Henderson Hospital	Gen	25	15	Indep	Yes	R N	1922
Moseley Hospital	Gen	25	15	Indep	Yes[1]	R N	1920
Hopkinsville, 9 696—Christian							
Jennie Stuart Memorial Hosp	Gen	27	18	Indep	Yes[1]	R N	1914
Western State Hospital	N&M	1 728	1 649	State	No	M D	1854
Jackson 1 503—Breathitt							
Bach Hospital	Gen	28	18	Indiv	No	R N	1915
Jackson City Hospital[3]	Gen	12	5	Indiv	No	M D	
Jenkins 4 707—Letcher							
Jenkins Hospital	Indus	65	23	Indus	No	R N	1911
Kenvir 1 212—Harlan							
Black Mountain Hospital	Indus	15	3	Indus	No	R N	1918
La Grange 1 060—Oldham							
Hubert Berkley Blaydes Hosp	Gen	10	6	Indiv	No	M D	1922
Lakeland 55—Jefferson							
Central State Hospital	N&M	1 989	1 846	State	No	M D	1873
Lebanon 3 239—Marion							
Boldrick Infirmary	Gen	15	5	Indiv	No	M D	1915
Elizabeth's Hospital	Gen	16	8	Indiv	Yes[1]	Lay	1897
Lexington 46 895—Fayette							
Eastern State Hospital	N&M	1 551	1 425	State	No	M D	1819
Elmwood Sanatorium	N&M	16	3	Indiv	No	Lay	1923
Good Samaritan Hospital ★▲	Gen	133	115	Church	Yes[1]	R N	1888
High Oaks Sanatorium	N&M	35	20	Indiv	No	M D	1887
Julius Marks Sanatorium	TB	90	58	County	No	M D	1916
Odd Fellows Orphans Home -	Chil	14	1	Frat	No	Lay	1898
St Joseph's Hospital ★▲	Gen	175	90	Church	Yes[1]	Lay	1875
London 1 707—Laurel							
Pennington General Hosp	Gen	35	15	Indep	No	M D	1921
Louisa 2 011—Lawrence							
Riverview Hospital[3]	Gen	12	5		No	M D	
Louisville 305 935—Jefferson							
Beechhurst Sanitarium	N&M	30	20	Indiv	No	M D	1896
Children's Free Hospital ▲	Gen	72	62	Indep	No	R N	1890
Jewish Hospital	Gen	55	40	Indep	Yes[1]	R N	1903
John N Norton Memorial Infirmary ▲	Gen	100	72	Church	Yes[1]	R N	1886
Kentucky Baptist Hospital ▲	Gen	130	101	Church	Yes[1]	Lay	1924
Kentucky State Tuberculosis Sanatorium	TB	82	70	State	No	M D	1920
King's Daughters Home for Incurables	Incur	60	49	Church	No	R N	1909
Kosair Crippled Children Hospital	Ortho	50	45	Indep	No	R N	1924
Louisville Baptist Orphans' Home -	Chil	35	12	Church	No	Lay	1869
Louisville City Hospital ★+▲	Gen	337	310	City	Yes[1]	Lay	1823
Louisville Neuropathic Sanat	N&M	26	23	Indep	No	M D	1915
Maple Heights Sanatorium and Hospital	Gen	17	10	Indiv	No	M D	1924
Methodist Episcopal Deaconess Hospital ▲	Gen	65	50	Church	Yes[1]	R N	1895
Mt St Agnes Sanitarium	N&M	48	30	Church	No	R N	
Pope Hospital	Gen	25	20	Indep	No	M D	1890
Red Cross Hospital	Gen	38	25	Indep	Yes[1]	R N	1899
St Anthony's Hospital ★▲	Gen	150	85	Church	Yes[1]	R N	1901
St Joseph's Infirmary ▲	Gen	300	160	Church	Yes[1]	Lay	1853
S S Mary and Elizabeth Hospital ★▲	Gen	145	75	Church	Yes[1]	R N	1874
Dr Stokes Sanatorium	N&M	35	20	Indiv	No	M D	1904
Susan Speed Davis Home and Hospital	Mater	10	5	Church	No	Lay	1914
United States Marine Hospital No 11 ▲	Gen	54	38	USPHS	No	M D	1852
William H Emrich Hospital	Gen	14	8	Indiv	Yes	M D	1921
Lynch 5 050—Harlan							
Lynch Hospital ▲	Indus	50	26	Indus	No	M D	1920
Madisonville 4 945—Hopkins							
Madisonville Hospital	Gen	20	12	Indep	No	Lay	1916
Manchester 626—Clay							
Anderson & Ricketts Hosp	Gen	10	5	Part	No	Lay	1925
Martin 160—Floyd							
Beaver Valley Hospital	Gen	50	25	Part	No	M D	1915
Mayfield 6 583—Graves							
Mayfield Hospital	Gen	30	14	Part	Yes[1]	Lay	1921
Maysville 6 107—Mason							
Hayswood Hospital	Gen	34	10	Indep	No	R N	1907
Middlesboro 8 011—Bell							
Brosheer Brummett Hosp	Gen	50	17	Part	Yes[1]	M D	1919
Mt Sterling 3 995—Montgomery							
Mary Chiles Hospital	Gen	16	10	Indep	No	R N	1919
Murray 2 415—Calloway							
Keys Houston Clinic	Gen	6	3	Part	No	M D	1925
Wm Mason Memorial Hospital ▲	Gen	65	41	Indiv	Yes[1]	Lay	1910
Outwood —Christian							
United States Veterans' Hospital, No 79 ▲	TB	430	300	VetBur	No	M D	1922
Owensboro 22 027—Daviess							
Owensboro City Hospital	Gen	100	44	City	Yes[1]	R N	1898
Paducah 25 852—McCracken							
Highland Sanatorium[3]	TB	10	3	County	No	Lay	1915
Illinois Central Hospital ▲	Gen	100	51	Indus	No	Lay	1881
Riverside Hospital	Gen	125	34	City	Yes[1]	R N	1906
Paintsville 1 383—Johnson							
Paintsville Hospital	Gen	30	16	Indep	Yes[1]	M D	1920
Paris 6,310—Bourbon							
W W Massie Memorial Hospital	Gen	41	22	City	Yes[1]	R N	1913
Pewee Valley 619—Oldham							
Kentucky Confederate Home Infirmary	Gen	28	15	State	No	Lay	1902
Pewee Valley Rural Sanit	Gen	6	3	Indep	No	Lay	1925
Pikeville 2 110—Pike							
Methodist Hospital of Kentucky	Gen	50	25	Church	Yes[1]	Lay	1920
Pineville 2 908—Bell							
Continental Miners Hosp	Indus	14	6	Indus	No	Lay	1916
Wilson Hospital	Gen	12	4	Indep	No	M D	1925
Richmond 5 622—Madison							
Gibson Hospital	Gen	12	6	Indiv	No	M D	1903
Pattie A Clay Infirmary	Gen	40	12	Indep	No	R N	1896
United States Public Health Service Trachoma Hosp	Trach	25	21	USPHS	No	M D	1926
Scottsville 2 179—Allen							
Graves Infirmary	Gen	11	3	Indiv	No	M D	1920
Seco 535—Letcher							
Seco Hospital	Gen	15	8	Indiv	No	M D	1920
Shelbyville 3 760—Shelby							
Amanda Smith Hospital	Gen	7	2	Church	No	R N	1910
King's Daughters Hospital	Gen	35	12	Church	No	R N	1906
Old Mason Home of Kentucky Hospital	Gen	18	4	Frat	No	Lay	1923
Smiths Grove 815—Warren							
Lucy T Owen Hospital	Gen	10	3	Indiv	No	Lay	1923
Somerset 4 672—Pulaski							
Pulaski County Hospital	Gen	15	6	Indep	Yes	M D	1925
Somerset General Hospital	Gen	25	15	Indep	No	M D	1905
Stanford 1 397—Lincoln							
Lincoln County Memorial Hospital	Gen	12	5	Cy&Co	No	Lay	1921
Valley Station 200—Jefferson							
Waverly Hill Sanatorium	TB	390	305	Cy&Co	No	M D	1908
Versailles 2 061—Woodford							
Woodford County Memorial Hospital	Gen	14	5	City	No	Lay	1901
Wayland 1 362—Floyd							
Wayland Hospital	Indus	6	3	Indus	No	M D	1913

KENTUCKY—Cont City Pop—County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt MD RN Lay	Year Est
Winchester 7 856—Clark							
Bush Hospital	Gen	26	15	Indiv	No	M D	1916
Clark County Hospital	Gen	31	15	Cy &Co	Yes[1]	R N	1917
Guerrant Clinic and Hosp	Gen	20	6	Indiv	No	M D	1927

Total registered hospitals in Kentucky 117 capacity 11 695, average census 8 [illegible] Hospitals not admitted to the register 4 capacity 40

LOUISIANA City Pop—County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt MD RN Lay	Year Est
Abbeville 3 461—Vermilion							
La Grande Hospital [2]	Gen	20	16	Indiv	No	M D	1919
Alexandria 20 651—Rapides							
Baptist Hospital ▲	Gen	[illegible]	40	Church	Yes[1]	Lay	1917
United States Veterans Hospital No 27▲	TB	400	224	VetBur	No	M D	1919
Baton Rouge 27 832—East Baton Rouge							
Baton Rouge General Hosp	Gen	65	37	Indep	Yes[1]	M D	1908
Louisiana State Penitentiary	Gen	40	22	State	No	Lay	
Our Lady of the Lake Sanitarium ▲	Gen	100	60	Church	Yes[1]	R N	1923
Bogalusa 8 245—Washington							
Elizabeth Sullivan Memorial Hospital ▲	Indus	96	73	Indus	Yes[1]	R N	1908
Carville 308—Iberville							
United States Marine Hospital No 66 + ▲	Lepr	425	275	USPHS	No	M D	1921
Covington 2 912—St Tammany							
Dural's Tuberculosis Sanat	TB	16	8	Indiv	No	M D	1901
New Fenwick Sanitarium	N&M	40	26	Indiv	No	M D	1892
Crowley 6 108—Acadia							
Crowley Sanitarium	Gen	16	8	Indep	No	M D	1913
De Ridder 3 535—Beauregard							
De Ridder Sanitarium	Gen	16	6	Indep	No	Lay	1920
Elizabeth 3 000—Allen							
Elizabeth Hospital	Indus	20	8	Indus	No	M D	1914
Eunice 3 272—St Landry							
Eunice Sanitarium	Gen	22	6	Indep	No	M D	191
Fisher 1,200—Sabine							
West Louisiana Sanitarium	Indus	35	20	Indus	No	M D	1914
Greenwood 230—Caddo							
Pines Sanatorium	TB	80	50	Indep	No	M D	1916
Haynesville 903—Claiborne							
Haynesville Hospital	Gen	24	10	Indep	No	M D	1922
Homer 3 305—Claiborne							
Homer Sanitarium	Gen	15	10	Indiv	No	Lay	1908
Houma 5 160—Terrebonne							
Dr Parker's Hospital	Gen	15	6	Indiv	Yes	R N	1926
Hygeia —St Tammany							
Camp Hygeia	TB	50	35	Indep	No	R N	1906
Jackson 2 320—East Feliciana							
East Louisiana State Hosp +	N&M	2 657	2 362	State	No	M D	1847
Lafayette 7 855—Lafayette							
Lafayette Sanitarium	Gen	23	12	Indep	No	R N	1906
St John Hospital	Gen	25	12	Indiv	No	R N	1919
Lake Charles 14 015—Calcasieu							
St Patrick's Sanitarium ▲	Gen	75	35	Church	Yes[1]	Lay	1903
Lecompte 1 034—Rapides							
Lecompte Sanitarium	Gen	18	8	Part	No	Lay	1914
Magnolia —East Baton Rouge							
Greenwell Springs Tuberculosis Hospital	TB	86	New	State	No	M D	1927
Mansfield 2 564—De Soto							
Mansfield Sanitarium	Gen	32	20	Indiv	No	M D	1913
Minden 6 105—Webster							
Minden Sanitarium	Gen	35	10	Indep	No	R N	1926
Monroe 14 347—Ouachita							
Riverside Sanitarium	Gen	60	25	Indep	Yes[1]	M D	1925
St Francis Sanitarium ▲	Gen	125	57	Church	Yes[1]	R N	1913
Natchitoches 3 388—Natchitoches							
Louisiana State Normal College	Gen	16	6	State	No	R N	1885
Natchitoches Hospital	Gen	25	4	Indep	No	R N	1920
New Iberia 6 278—Iberia							
Dauterive Sanitarium	Gen	15	7	Indiv	No	M D	1920
Landry Sanitarium	Gen	5	3	Indiv	No	M D	1920
New Orleans 414 493—Orleans							
Charity Hospital of Louisiana ★+▲	Gen	1 551	1 230	State	Yes[1]	M D	1786
City Hospital for Mental Diseases	Mental	100	80	City	No	M D	1911
Eye Ear Nose and Throat Hospital ▲	EENT	66	23	Indep	No	M D	1889
Flint-Goodridge Hospital ▲	Gen	56	31	Church	Yes[1]	M D	1896
French Hospital	Gen	70	30	Frat	No	Lay	1913
Hotel Dieu Hospital ★▲	Gen	255	160	Church	Yes[1]	R N	1858
Illinois Central Railroad Hospital	Indus	70	34	Indus	No	R N	1911
Isolation Hospital	Iso	120	3	Cy&Co	No	Lay	1916
Louisiana Retreat	N&M	240	240	Church	No	Lay	1876
Mercy Hospital ▲	Gen	125	65	Church	Yes[1]	Lay	1923
New Orleans Convalescent Home	Conv	30	2	Indep	No	Lay	1889
New Orleans Home for Incurables	Incur	155	90	Indiv	No	Lay	1892
New Orleans Hospital and Dispensary for Women and Children	Gen	35	20	Indep	Yes	R N	1906
Presbyterian Hospital of New Orleans	Gen	104	50	Church	Yes[1]	R N	1903
St Anna's Asylum	Gen	10	3	Church	No	Lay	1847
St Vincent's Infant Asylum [2]	Chil	24	10	Church	No	R N	1858
Soldiers' Home of Louisiana [2]	Gen	25	19	State	No	Lay	1884
Southern Baptist Hosp ★▲	Gen	224	96	Church	Yes[1]	Lay	1926

LOUISIANA—Cont City Pop—County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt MD RN Lay	Year Est
Touro Infirmary ★▲	Gen	362	266	Indep	Yes[1]	M D	1853
United States Marine Hospital No 11 ★▲	Gen	400	320	USPHS	No	M D	1835
United States Veterans Hospital No 81 ▲	Gen	[illegible]	256	VetBur	No	M D	1921
Opelousas 4 437—St Landry							
St Landry Sanitarium	Gen	50	12	Indiv	No	R N	1915
St Rita's Infirmary	Gen	6	2	Part	No	M D	1921
Patterson 2 [illegible]—St Mary							
St Mary's Hospital	Gen	30	18	Part	Yes[1]	R N	1910
Pineville 2 188—Rapides							
Central Louisiana State Hospital	N&M	1 202	1 152	State	No	M D	1906
Plaquemine 4 632—Iberville							
Plaquemine Sanitarium	Gen	27	10	Indep	No	R N	1923
Shreveport 57 857—Caddo							
Highland Sanitarium ▲	Gen	110	60	Indiv	Yes[1]	R N	1917
Mercy Sanitarium	Gen	18	8	Part	No	M D	1911
North Louisiana Sanit ▲	Gen	100	50	Indep	Yes[1]	M D	1907
T E Schumpert Memorial Sanitarium ★▲	Gen	200	104	Church	Yes[1]	Lay	1907
Shreveport Charity Hosp ★▲	Gen	250	198	State	Yes[1]	M D	1872
Shriners Hospital for Crippled Children + ▲	Ortho	60	60	Frat	No	R N	1922
Tri State Sanitarium	Gen	85	45	Part	Yes[1]	Lay	1924

Total registered hospitals in Louisiana 67 Capacity 11 208 average census 8 255 Hospitals not admitted to the register 1 capacity 1

MAINE City Pop—County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt MD RN Lay	Year Est
Auburn 18 [illegible]00—Androscoggin							
Auburn Private Hospital	Gen	10	5	Indiv	No	R N	1923
Augusta 14 700—Kennebec							
Augusta General Hospital	Gen	80	40	Indep	Yes[1]	M D	1891
Augusta State Hospital	N&M	1 [illegible]	1 175	State	Yes[1]	M D	1840
Bangor 26 800—Penobscot							
Bangor Sanatorium	TB	25	19	Indep	No	R N	1910
Bangor State Hospital	N&M	770	756	State	Yes[1]	M D	1901
Eastern Maine General Hospital ★▲	Gen	136	125	Indep	Yes[1]	M D	1892
Home Private Hospital	Mater	12	[illegible]	Indiv	No	R N	1917
Laura Purcell Hospital	Gen	16	New	Indiv	No	R N	192[illegible]
Paine Private Hospital	Gen	22	1[illegible]	Indiv	Yes[1]	R N	1[illegible]06
Stinson Private Hospital	Gen	11	8	Indiv	No	R N	[illegible]
Bar Harbor [illegible]—Hancock							
Bar Harbor Medical and Surgical Hospital	Gen	34	14	Indep	No	R N	1[illegible]07
Bath 17 751—Sagadahoc							
Bath City Hospital ▲	Gen	50	18	Indep	Yes[1]	R N	19[illegible]
Belfast 5 083—Waldo							
Bradbury Memorial Hosp	Gen	25	9	Indep	Yes[1]	Lay	1[illegible]2[illegible]
Waldo County General Hospital	Gen	[illegible]0	11	County	Yes[1]	R N	1904
Biddeford 18 600—York							
Trull Hospital	Gen	40	11	Part	Yes[1]	R N	1901
Webber Hospital	Gen	60	25	Indep	Yes[1]	R N	1889
Brewer 6 061—Penobscot							
Mrs Beaupre's Home Hosp	Mater	6	1	Indiv	No	Lay	1915
Calais 6 084—Washington							
Calais Hospital	Gen	50	20	Indiv	Yes[1]	R N	1917
Cape Cottage 33—Cumberland							
Station Hospital	Gen	29	14	Army	No	M D	1898
Caribou 6 018—Aroostook							
Cary Memorial Hospital	Gen	40	19	Indep	Yes[1]	R N	1924
Castine 743—Hancock							
Castine General Hospital	Gen	8	1	Indep	No	M D	1918
Dexter 4 135—Penobscot							
Plummer Memorial Hosp	Gen	20	7	Indep	Yes[1]	R N	1920
Dover Foxcroft 2 071—Piscataquis							
Cary Hospital	Gen	12	8	Indiv	No	R N	19[illegible]4
Eagle Lake 700—Aroostook							
Northern Maine General Hospital	Gen	32	17	Church	No	Lay	1906
East Parsonfield 300—York							
Restland	TB	50	25	Indep	No	Lay	1910
Ellsworth 3 058—Hancock							
Hurley Private Hospital	Gen	15	9	Indiv	Yes[1]	R N	19[illegible]1
Fairfield 2 747—Somerset							
Central Maine Sanatorium	TB	1[illegible]0	145	State	Yes	M D	1910
Farmington 1 659—Franklin							
Franklin Hospital	Gen	15	8	Indep	No	R N	1921
Ft Fairfield 1 993—Aroostook							
Community Hospital	Gen	20	6	Indep	Yes	R N	1921
Gardiner 5 475—Kennebec							
Gardiner General Hospital	Gen	20	11	Indep	Yes[1]	R N	1918
Greenville Junction, 330—Piscataquis							
Charles A Dean Hospital	Gen	23	10	Indep	Yes[1]	R N	191[illegible]
Hebron 65[illegible]—Oxford							
Western Maine Sanatorium +	TB	141	125	State	No	M D	1904
Highpine 165—York							
Pine Tree Sanitarium' Rest Cure	N&M	60	20	Indep	No	M D	1909
Houlton 6 191—Aroostook							
Aroostook Hospital	Gen	35	21	Indep	Yes[1]	R N	1906
Madigan Memorial Hospital	Gen	45	21	Church	Yes[1]	Lay	1914
Lewiston 35 500—Androscoggin							
Central Maine General Hospital ★▲	Gen	110	90	Indep	Yes[1]	R N	1891
St Mary's General Hosp ▲	Gen	134	135	Church	Yes[1]	Lay	1892
Lincoln 1 596—Penobscot							
Deering Hospital	Gen	0	6	Indiv	No	R N	192
Mars Hill 1 783—Aroostook							
Mars Hill Hospital	Gen	8	4	Indiv	No	Lay	191

MAINE—Cont City Pop—County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt MD RN Lay	Year Est
National Soldiers Home 2 350—Kennebec							
National Soldiers Home ★▲	Gen	341	264	Federal	No	M D	1866
Portland 76 400—Cumberland							
Dr Black's Private Maternity Hospital	Mater	10	5	Indiv	No	Lay	1924
Children's Hospital ▲	Ortho	90	59	Indep	Yes[1]	R N	1908
Dr Leighton's Private Maternity Hospital	Mater	15	12	Indiv	Yes	R N	1912
Maine Eye and Ear Infirm ▲	Gen	100	89	Indep	Yes[1]	M D	1886
Maine General Hospital ★▲	Gen	180	116	Indep	Yes[1]	M D	1868
Portland City Hospital	Gen	70	69	City	No	M D	1877
Portland Isolation Cottage	Iso	20	2	City	No	M D	1892
Queen's Hospital	Gen	50	25	Church	Yes[1]	Lay	1919
St Barnabas Hospital ▲	Gen	75	46	Indep	Yes[1]	Lay	1905
State Street Hospital ▲	Gen	50	38	Indep	Yes[1]	R N	1927
Station Hospital	Gen	29	9	Army	No	M D	19[illegible]2
United States Marine Hospital No 16▲	Gen	42	52	USPHS	No	M D	1859
Dr C P Wescott Sanat	Dr&Al	13	11	Indiv	No	M D	1915
Presque Isle 3 452—Aroostook							
Northern Maine Sanatorium	TB	105	94	State	No	M D	1920
Presque Isle General Hosp	Gen	46	31	Indep	Yes[1]	R N	1912
Sweetser Connick Hospital	Mater	5	4	Indiv	No	Lay	1902
Rockland 8 109—Knox							
Knox County General Hosp	Gen	65	29	Indep	Yes[1]	R N	1902
Rumford 7 016—Oxford							
Rumford Community Hosp	Gen	54	22	Indep	Yes[1]	R N	1926
Skowhegan 5 981—Somerset							
Kennebec Valley Hospital	Gen	36	15	Indiv	Yes[1]	M D	1919
South Paris 1 793—Oxford							
The Beeches	Conv	30	15	Indiv	No	M D	1896
Strong 779—Franklin							
Dr Bell's Hospital	Gen	10	5	Indiv	No	R N	1920
Thomaston 2 019—Knox							
Maine State Prison Hosp	Gen	10	2	State	No	M D	1875
Union 1 200—Knox							
Jones Sanitarium	Conv	30	25	Indiv	No	R N	1905
Waterville 14 600—Kennebec							
Elm City Hospital	Gen	20	17	Indiv	Yes[1]	R N	1916
Sisters Hospital ▲	Gen	125	65	Church	Yes[1]	R N	1913
West Boothbay Harbor—Lincoln							
St Andrew's Hospital	Gen	22	8	Indep	Yes	R N	1908
Westbrook 9 435—Cumberland							
Westbrook Hospital	Gen	18	12	Indiv	No	M D	1908
West Pownal 275—Cumberland							
Pownal State School	N&M	700	669	State	No	M D	1908
Winthrop 1 902—Kennebec							
Winthrop Community Hosp	Gen	8	5	Indep	No	M D	1925
York Village 1 000—York							
York Hospital	Gen	16	4	Indep	No	R N	1910

Total registered hospitals in Maine 70 capacity 5 966 average census 4 793 Hospitals not admitted to the register 2 capacity 16

MARYLAND City Pop—County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt MD RN Lay	Year Est
Aberdeen Proving Ground—Hartford							
Station Hospital	Gen	50	6	Army	No	M D	1917
Annapolis 13 100—Anne Arundel							
Annapolis Emergency Hosp	Gen	50	32	Indep	Yes[1]	R N	1901
United States Naval Hosp	Gen	240	68	Navy	No	M D	1853
Baltimore 807 700—Baltimore City							
Baltimore City Hospitals (General) ★▲	Gen	528	444	City	Yes	Lay	1835
Baltimore City Hospitals (Psychopathic)	N&M	300	557	City	Yes	Lay	1865
Baltimore City Hospitals (Tuberculosis)	TB	179	114	City	Yes	Lay	1865
Baltimore City Jail Hosp [2]	Gen	32	12	City	No	M D	1880
Baltimore Eye Ear and Throat Charity Hospital	EENT	50	20	Indep	No	Lay	1885
Bon Secours Hospital ▲	Gen	65	48	Church	Yes[1]	R N	1919
Children's Hospital School ▲	Ortho	120	95	Indep	No	Lay	1912
Church Home and Infirmary of City of Baltimore ★▲	Gen	157	136	Church	Yes[1]	R N	1858
Colonial Hospital ▲	Gen	85	68	Part	Yes[1]	M D	1920
Franklin Square Hosp ★▲	Gen	114	80	Indep	Yes[1]	M D	1900
Happy Hills Convalescent Home for Children	Conv	20	19	Indep	No	R N	1922
Home for Incurables of Baltimore City	Incur	74	74	Indep	Yes	R N	1883
Home for the Aged of the Methodist Epis Church	Gen	9	15	Church	No	Lay	1868
Hospital for Women of Maryland ★▲	Gen	110	105	Indep	Yes[1]	R N	1892
Howard A Kelly Hospital ▲	Sk&Ca	30	20	Indep	No	M D	1912
James Lawrence Kernan Hospital and Industrial School for Crippled Children ▲	Ortho	62	35	Indep	No	Lay	1896
Johns Hopkins Hosp ★+▲	Gen	717	585	Indep	Yes[1]	M D	1867
Maryland General Hosp ★▲	Gen	200	156	Church	Yes[1]	Lay	1882
Maryland Penitentiary Hospital [2]	Gen	34	20	State	No	M D	1808
Mercy Hospital ★▲	Gen	250	220	Church	Yes[1]	Lay	1874
Mt Hope Retreat	N&M	682	670	Church	Yes	Lay	1840
Presbyterian Eye Ear and Throat Charity Hospital	EENT	40	9	Church	No	R N	1877
Provident Hospital and Free Dispensary	Gen	32	35	Indep	Yes[1]	M D	1891
St Agnes Hospital ★+▲	Gen	192	150	Church	Yes[1]	R N	1862
St Joseph's Hospital ★+▲	Gen	243	174	Church	Yes[1]	Lay	1864
Sinai Hospital of Baltimore ★▲	Gen	229	145	Indep	Yes[1]	R N	1851

MARYLAND—Cont City Pop—County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt MD RN Lay	Year Est
South Baltimore General Hospital ▲	Gen	60	50	Indep	Yes[1]	Lay	1918
Southern Hospital of Baltimore	Conv	30	23	Church	No	Lay	191[illegible]
Strathmore Park Hospital	Gen	12	3	Indiv	No	Lay	1906
Sydenham Hospital	Iso	110	75	City	No	M D	1909
Union Memorial Hosp ★+▲	Gen	227	133	Indep	Yes[1]	R N	1854
United States Marine Hospital No 1 ★▲	Gen	167	157	USPHS	No	M D	180[illegible]
University of Maryland Hospital ★▲	Gen	250	210	State	Yes[1]	M D	1823
Volunteers of America Hospital ▲	Gen	40	10	Indep	No	Lay	1920
West Baltimore General Hospital ★+▲	Gen	155	100	Indep	Yes[1]	M D	1904
Dr White's Maternity Hosp	Gen	20	4	Indiv	Yes	M D	1925
Cambridge 7 467—Dorchester							
Cambridge-Maryland Hosp ▲	Gen	75	40	Indep	Yes[1]	R N	1898
Eastern Shore State Hosp	N&M	285	265	State	No	M D	1912
Camp Holabird—Baltimore							
Station Hospital	Gen	25	10	Army	No	M D	1918
Camp Meade—Anne Arundel							
Station Hospital	Gen	100	39	Army	No	M D	1917
Catonsville 4 560—Baltimore							
General German Orphan Home [2] [3]	Chil	6	3	Indep	No	Lay	1863
Gundry Sanitarium	N&M	46	44	Indiv	No	M D	1900
Harlem Lodge	N&M	40	32	Part	No	M D	1891
Sieling's Sanatorium	Conv	30	24	Indiv	No	R N	1910
Spring Grove State Hosp	N&M	1 225	980	State	Yes	M D	1797
Cheltenham 37—Prince Georges							
House of Reformation [2]	Gen	16	5	State	No	Lay	1872
College Park 316—Prince Georges							
Infirmary University of Maryland [2]	Gen	15	2	State	No	Lay	1901
Crisfield 4 116—Somerset							
Edward W McCready Memorial Hospital	Gen	37	22	Indep	Yes[1]	R N	1923
Crownsville—Anne Arundel							
Crownsville State Hospital	N&M	737	705	State	Yes[1]	M D	1910
Cumberland 34 400—Allegany							
Allegany County Tuberculosis Sanatorium [3]	TB	18	10	County	No	Lay	1913
Allegany Hospital of the Sisters of Charity ▲	Gen	90	69	Church	Yes[1]	Lay	1911
Sylvan Retreat [3]	N&M	96	70	County	No	Lay	1892
Western Maryland Hosp ▲	Gen	69	60	State	Yes[1]	R N	1891
Easton 3 442—Talbot							
Easton Emergency Hosp ▲	Gen	54	36	County	Yes[1]	R N	1906
Edgewood 110—Harford							
Station Hospital	Gen	105	19	Army	No	M D	1918
Elkton 2,660—Cecil							
Union Hospital of Cecil County	Gen	45	21	County	Yes[1]	R N	1908
Ellicott City 1 246—Howard							
Patapsco Manor Sanitarium	N&M	25	17	Indep	No	M D	1907
Ft Howard 82—Baltimore							
Station Hospital	Gen	24	8	Army	No	M D	1900
Ft Washington 415—Prince Georges							
Station Hospital	Gen	26	3	Army	No	M D	1861
Frederick 12 100—Frederick							
Frederick City Hospital ▲	Gen	75	54	Indep	Yes[1]	R N	1901
Maryland State School for the Deaf [2]	Gen	6	1	State	No	Lay	1868
Frostburg 6 017—Allegany							
Miner's Hospital	Gen	35	14	State	No	R N	1913
Hagerstown 32 000—Washington							
Washington County Hosp	Gen	90	81	County	Yes[1]	R N	1905
Havre de Grace 4 374—Harford							
Havre de Grace Hospital	Gen	40	25	City	No	R N	1912
Henryton 27—Carroll							
Maryland Tuberculosis Sanatorium	TB	106	98	State	Yes	M D	1903
Ijamsville 71—Frederick							
Riggs Cottage Sanitarium	N&M	20	20	Indiv	No	M D	1895
Jessups 161—Anne Arundel							
Maryland House of Correction [2]	Gen	25	20	State	No	Lay	1878
Laurel 2 239—Prince Georges							
Laurel Sanitarium	N&M	75	65	Indep	No	M D	1905
Loch Raven 62—Baltimore City							
Maryland Training School for Boys [2]	Gen	8	2	State	No	M D	18[illegible]
Olney 83—Montgomery							
Montgomery County General Hospital	Gen	28	19	Indep	No	R N	191[illegible]
Orange Grove (Ilchester P O)—Baltimore							
St Gabriel's Home	Conv	26	24	Church	No	M D	1896
Perry Point 80—Cecil							
United States Veterans Hospital No 42 ▲	N&M	1 000	891	VetBur	No	M D	1919
Pt Deposit 1 090—Cecil							
Dr G H Richards Private Hospital	Gen	35	16	Indiv	No	M D	1923
Randallstown 141—Baltimore							
Mt Wilson Branch Maryland Tuberculosis Sanat	TB	66	50	State	No	M D	1920
Reisterstown 1 030—Baltimore							
Jewish Home for Consumptives +	TB	60	55	Church	No	M D	1908
Relay 2 000—Baltimore							
Relay Sanitarium	N&M	50	27	Part	No	Lay	187[illegible]
Rockville 1 145—Montgomery							
Chestnut Lodge Sanitarium	N&M	30	25	Indiv	No	M D	1910
Waverley Sanatorium	Conv	15	13	Indiv	No	Lay	1923

MARYLAND—Cont

City, Pop—County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt M D R N Lay	Year Est
Salisbury 7 502—Wicomico							
Eastern Shore Tuberculosis Sanitarium	TB	46	30	State	No	Lay	1912
Peninsula General Hosp ▲	Gen	96	70	Indep	Yes¹	R N	1897
State Sanatorium 260—Frederick							
Maryland Tuberculosis Sanatorium	TB	442	410	State	Yes	M D	1908
Sykesville 610—Carroll							
Springfield State Hospital+	N&M	1 875	1,779	State	Yes	M D	1896
Towson, 3 500—Baltimore							
Hospital for Consumptives of Maryland	TB	145	138	Indep	Yes	M D	1894
St Vincent's Male Orphan Asylum*³	Chil	16	8	Indep	No	Lay	1840
Sheppard and Enoch Pratt Hospital	N&M	182	153	Indep	Yes¹	M D	1891

Total registered hospitals in Maryland, 68 capacity 13 746 average census 11 985 Hospitals not admitted to the register 3 capacity 36

MASSACHUSETTS

City, Pop—County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt M D R N Lay	Year Est
Adams, 13 700—Berkshire							
W B Plunkett Memorial Hospital	Gen	35	21	City	No	R N	1918
Allerton 300—Plymouth							
Dr C P Sylvester's Private Hospital	Gen	12	2	Indiv	No	M D	1907
Amesbury 11 600—Essex							
Amesbury Hospital	Gen	50	New	Indep	No	R N	1927
Amherst, 5 112—Hampshire							
Pratt Health Cottage*	Gen	14	3	Indep	No	M D	1896
Rangeview Sanitarium	Conv	15	10	Indiv	No	M D	1905
Andover 10 291—Essex							
Isham Infirmary	Gen	38	4	Indep	No	M D	1912
Arlington 26 400—Middlesex							
The Pines	Conv	7	6	Indiv	No	Lay	1920
Ring Sanatorium and Hosp	N&M	60	50	Indep	Yes	M D	1879
Symmes Arlington Hosp▲	Gen	62	9	Indep	Yes¹	R N	1902
Dr Young's Hospital	Gen	10	5	Indiv	Yes	R N	1910
Attleboro 20 800—Bristol							
Attleboro Home Sanitarium	Conv	10	9	Indiv	No	M D	1890
Bristol County Tuberculosis Hospital	TB	60	53	County	Yes	M D	1919
Sturdy Memorial Hospital▲	Gen	103	45	Indep	Yes¹	R N	1913
Ayer 3 032—Middlesex							
Community Memorial Hosp	Gen	12	8	Indep	No	R N	1921
Station Hospital	Gen	125	50	Army	No	M D	1917
Baldwinsville 2 077—Worcester							
Hospital Cottages for Children	Gen	140	95	Indep	No	M D	1882
Pine Terrace	N&M	5	2	Indiv	No	M D	1907
Belmont 16 300—Middlesex							
McLean Hospital	N&M	235	223	Indep	Yes¹	M D	1818
Beverly 22 700—Essex							
Beverly Hospital▲	Gen	100	67	Indep	Yes¹	R N	1893
Boston 787 100—Suffolk							
Adams Nervine	Nerv	36	34	Indep	No	M D	1877
Bay State Hospital	Gen	21	18	Indep	Yes	R N	1918
Beth Israel Hospital ▲	Gen	50	44	Indep	Yes¹	M D	1911
Boston City Hospital ★+▲	Gen	939	761	City	Yes¹	M D	1864
Boston Dispensary	Chil	18	23	Indep	Yes	Lay	1796
Boston Home for Incurables	Incur	40	40	Indep	No	Lay	1882
Boston Lying in Hospital▲	Mater	100	82	Indep	Yes	R N	1832
Boston Psychopathic Hosp +	N&M	110	83	State	Yes	M D	1912
Boston Sanatorium +	TB	416	383	City	No	M D	1908
Boston State Hospital +	N&M	1 897	2 182	State	Yes	M D	1839
Carney Hospital ★▲	Gen	240	150	Church	Yes¹	R N	1863
Channing Home	TB	22	20	Indep	No	R N	1857
Children's Hospital+▲	Chil	196	157	Indep	Yes¹	R N	1869
Codman Square Hospital	Gen	21	14	Indep	Yes	R N	1920
Collis P Huntington Memorial Hospital+	Sk&Ca	22	16	Indep	No	R N	1912
Convalescent Home of the Boston City Hospital	Conv	34	12	City	No	Lay	1890
Cruft Hospital and Dispensary of the Franklin Square House	Gen	9	3	Indep	No	M D	
Deer Island Hospital	Gen	25	20	Cy&Co	No	M D	1861
Detention Hospital	Iso	56	6	City	No	Lay	1909
Dorchester Cottage Hospital	Gen	12	6	Indep	No	R N	1899
East Boston Relief Station of the Boston City Hosp	Gen	12	1	City	No	M D	1908
Eliot Hospital	EENT	27	12	Indep	No	Lay	1886
Elm Hill Private Hospital	Gen	22	15	Indiv	No	R N	1909
Emerson Hospital	Gen	40	20	Indiv	Yes¹	R N	1901
Evangeline Booth Home and Maternity Hospital▲	Mater	30	28	Church	No	Lay	
Faulkner Hospital ▲	Gen	54	51	Indep	Yes¹	R N	1900
Fenway Hospital	Gen	38	30	Indep	Yes¹	Lay	
Florence Crittenton League of Compassion	Mater	18	35	Indep	Yes	Lay	1908
Glenside Hospital	N&M	30	30	Indiv	No	M D	1909
Gynecological and Obstetrical Department of the Boston City Hospital	Mater	138	New	City	Yes	M D	1927
Harley Private Hospital▲	Gen	62	52	Indep	Yes¹	R N	1916
Hart Private Hospital▲	Gen	60	30	Indep	Yes¹	R N	1906
Haymarket Square Relief Station of the Boston City Hospital	Gen	34	10	City	Yes	M D	1902
Home for Invalids and Aged People-	Gen	8	3	Indiv	No	Lay	1886
Home for Jewish Children*	Chil	10	5	Indep	No	Lay	1897
The Homestead	Conv	8	7	Indiv	No	R N	1920
House of the Good Samaritan▲	Cancer	75	69	Indep	No	R N	1861
Infant's Hospital ▲	Chil	20	49	Indep	Yes	R N	1881
Long Island Hospital★+▲	Gen	450	376	City	Yes¹	Lay	1887
MacLeod Hospital	Gen	25	18	Indep	No	R N	1898
Massachusetts Eye and Ear Infirmary+▲	EENT	209	143	Indep	Yes	M D	1827
Massachusetts General Hospital ★+▲	Gen	532	432	Indep	Yes¹	M D	1811
Massachusetts Homeopathic Hospital ★+▲	Gen	341	317	Indep	Yes¹	M D	1855
Massachusetts State Prison Hospital -	Gen	40	10	State	No	M D	1805
Massachusetts Women's Hospital	Gen	36	20	Indep	Yes¹	R N	1890
New England Baptist Hospital ▲	Gen	100	103	Indep	Yes¹	R N	1893
New England Deaconess Hospital ▲	Gen	170	130	Indep	Yes¹	R N	1896
New England Home for Little Wanderers	Chil	93	16	Indep	No	Lay	1865
New England Hospital for Women and Children ★▲	Gen	165	109	Indep	Yes¹	R N	1862
Palmer Memorial Hospital +	Sk&Ca	76	30	Church	Yes	Lay	1920
Peter Bent Brigham Hospital ★+▲	Gen	236	208	Indep	Yes¹	M D	1902
Prendergast Preventorium	TB	32	30	Indep	No	M D	1909
Riverbank Hospital	Gen	32	9	Indiv	No	R N	1914
Robert Breck Brigham Hospital ▲	Gen	115	100	Indep	No	R N	1914
Roxbury Hospital	Gen	61	42	Church	No	Lay	1918
St Elizabeth's Hospital ★▲	Gen	220	214	Church	Yes¹	Lay	1872
St Luke's Home for Conv	Conv	[illegible]	16	Church	No	M D	1871
St Margaret's Hospital	Gen	34	3	Church	Yes¹	R N	1911
St Mary's Infant Asylum and Lying in Hospital	Gen	182	143	Church	Yes	R N	1872
South Department for Infectious Diseases of the Boston City Hospital	Iso	338	169	City	No	M D	1895
Station Hospital	Gen	15	5	Army	No	M D	1900
Station Hospital	Gen	12	1	Army	No	M D	1861
Talitha Cumi Maternity Home and Hospital	Mater	16	9	Indep	No	Lay	1846
Dr Taylor's Private Hosp	N&M	18	5	Indiv	No	M D	1915
United States Veterans' Hospital No 44 ▲	N&M	270	259	VetBur	No	M D	1919
Vincent Memorial Hospital	Gen	22	15	Indep	No	R N	1890
Washingtonian Home	Alcohol	50	18	Indep	No	M D	1857
Braintree 13 800—Norfolk							
Braintree Cottage Hospital	Mater	6	1	Indiv	No	R N	1922
Norfolk County Hospital	TB	100	88	County	No	M D	1919
Bridgewater 9 465—Plymouth							
Bridgewater State Hospital	N&M	1 477	1 477	State	No	Lay	1856
Brockton 65,343—Plymouth							
Brockton Hospital ★▲	Gen	117	80	Indep	Yes¹	M D	1896
Goddard Hospital ▲	Gen	60	49	Indep	Yes¹	R N	1902
Moore Hospital	Gen	25	19	Indiv	No	M D	1917
Brookline 43,900—Norfolk							
Board of Health Hospital	Iso	60	21	City	No	R N	1899
Bournewood Hospital	N&M	18	16	Indiv	No	M D	1884
Brooks Hospital	Gen	35	25	Indep	No	R N	1915
Corey Hill Hospital	Gen	34	29	Part	No	R N	1904
Free Hospital for Women▲	Gen	94	54	Indep	Yes	R N	1875
Trumbull Hospital	Gen	46	36	Indep	No	Lay	1920
Cambridge 122 000—Middlesex							
Cambridge City Hospital▲	Gen	120	91	City	Yes¹	R N	1917
Cambridge Hospital ★▲	Gen	117	107	Indep	Yes¹	R N	1871
Cambridge Relief Hospital	Gen	40	30	Indep	Yes	M D	1905
Cambridge Tuberculosis Hospital	TB	85	52	City	No	M D	1905
Charlesgate Hospital	Gen	85	51	Indep	Yes¹	R N	1906
Chester Hospital	Gen	59	35	Indep	Yes¹	R N	1904
Holy Ghost Hospital for Incurables	Incur	140	135	Church	No	R N	1893
*Stillman Infirmary**	*Gen*	*72*	*16*	*Indep*	*No*	*M D*	
Canton 5 896—Norfolk							
Massachusetts Hosp School	Ortho	400	281	State	No	M D	1907
Chelsea 48 200—Suffolk							
Chelsea Memorial Hospital	Gen	80	68	Indep	Yes¹	R N	1893
Soldiers' Home in Massachusetts▲	Gen	253	211	Indep	Yes	M D	1882
United States Marine Hospital No 2 ▲	Gen	167	155	USPHS	No	M D	1798
United States Naval Hospital ★▲	Gen	857	359	Navy	No	M D	1840
Chicopee 43 200—Hampden							
Health Department Hosp	TB	25	15	City	No	R N	1913
Chicopee Falls 11 500—Hampden							
Bellevue Hospital	Gen	35	15	Church	No	Lay	1922
Clinton 14 500—Worcester							
Clinton Hospital ▲	Gen	65	34	Indep	Yes¹	R N	1889
Concord 6 461—Middlesex							
Emerson Hospital in Concord	Gen	27	17	Indep	No	R N	1911
Massachusetts Reformatory Hospital*	Gen	50	1	State	No	Lay	1884
Danvers 12 000—Essex							
Danvers State Hospital ³	N&M	1 775	1 701	State	Yes¹	M D	1878
Dartmouth 9 096—Bristol							
Crary Clinic Hospital	Gen	25	20	Indiv	Yes	M D	1915
Dracut 6 400—Middlesex							
Blanchard Private Hospital	Mater	8	5	Indiv	No	R N	1916
Everett 42 500—Middlesex							
Everett Cottage Hospital or Whidden Memorial Hosp	Gen	44	30	Indep	Yes	R N	1894
Fall River 131 000—Bristol							
Fall River General Hosp ★▲	Gen	135	105	City	Yes¹	M D	1894
Fall River General Hospital	TB	111	103	City	No	M D	1910
St Anne's Hospital	Gen	89	38	Church	Yes	Lay	1906
Truesdale Hospital▲	Gen	120	63	Indep	Yes¹	M D	1909
Union Hospital ★▲	Gen	150	103	Indep	Yes¹	R N	1900

MASSACHUSETTS—Cont City Pop—County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt M D R N Lay	Year Est
Fitchburg 44 200—Worcester							
Burbank Hospital ★▲	Gen	177	85	City	Yes[1]	M D	1894
Florence 2 490—Hampshire							
Florence Lying in Hospital	Mater	7	4	Indiv	No	G N	1922
Forest Hills (Boston P O)—Suffolk							
Forest Hills Hospital	Gen	125	100	Indep	Yes[1]	M D	1914
Ft Andrews —Plymouth							
Station Hospital	Gen	26	5	Army	No	M D	1901
Ft Rodman —Bristol							
Station Hospital	Gen	12	None	Army	No	M D	1898
Foxboro 4 934—Norfolk							
Foxboro State Hospital	N&M	1 000	900	State	No	M D	1895
Framingham 22 000—Middlesex							
Framingham Hospital	Gen	75	46	Indep	Yes[1]	R N	1890
Reformatory for Women	Gen	60	9	State	No	Lay	1877
Union Avenue Hospital	Gen	53	45	Indep	Yes[1]	R N	1912
Woodside Cottages	Conv	22	10	Indep	No	M D	1900
Gardner 19 100—Worcester							
Gardner State Colony	N&M	1 070	1 010	State	No	M D	1902
Henry Heywood Memorial Hospital ▲	Gen	84	58	Indep	Yes	R N	1907
Gloucester 23,500—Essex							
Addison Gilbert Hospital	Gen	50	27	Indep	Yes[1]	R N	1897
Great Barrington 6 815—Berkshire							
Fairview Hospital	Gen	20	13	Indep	No	R N	1912
Greenfield 15 246—Franklin							
Franklin County Public Hospital ▲	Gen	90	43	Indep	Yes[1]	R N	1895
Groton 2 155—Middlesex							
Groton General Hospital	Gen	10	5	Indiv	No	M D	1908
Haverhill 49,232—Essex							
Benson Hospital	Gen	10	10	Indiv	No	R N	1918
General Stephen Henry Gale Hospital ▲	Gen	104	73	City	Yes[1]	R N	1916
Hale Hospital	Gen	65	41	Indep	Yes[1]	R N	1888
Haverhill City Home Infirmary	Gen	50	40	City	No	Lay	1903
James J McVey Hospital	Gen	14	5	Indiv	No	R N	1925
Riverside Hospital	Mater	8	4	Indiv	No	R N	1925
Haydenville 1 245—Hampshire							
Hampshire County Sanat	TB	75	68	County	No	M D	1914
Holbrook 3 273—Norfolk							
Elmhurst Sanatorium	Conv	15	9	Indiv	No	M D	1916
Holden 2 970—Worcester							
Holden District Hospital	Gen	25	18	Indep	No	R N	1918
Holyoke 60 400—Hampden							
Carpenter Isolation Hosp	Iso	20	4	City	No	R N	1918
Holyoke Hospital ▲	Gen	1[illegible]4	95	Indep	Yes[1]	R N	1891
Holyoke Sanatorium	TB	56	32	City	No	R N	1912
Holyoke Surgical Hospital	Gen	12	8	Part	No	Lay	1920
Providence Hospital ▲	Gen	121	92	Church	Yes[1]	R N	1894
Hyannis 1 800—Barnstable							
Cape Cod Hospital	Gen	35	29	Indep	No	R N	1919
Ipswich 5 777—Essex							
Benjamin Stickney Cable Memorial Hospital	Gen	20	16	Indep	No	Lay	1917
Lancaster 2 678—Worcester							
Industrial School for Girls	Gen	19	1	State	No	Lay	1856
Lawrence 93 500—Essex							
Clover Hill Hospital	Gen	25	12	Indep	No	R N	1923
Lawrence General Hosp ★▲	Gen	130	87	Indep	Yes[1]	R N	1875
Lawrence Municipal Hosp	Gen	65	50	City	No	M D	1852
Leominster 22 700—Worcester							
Leominster Hospital	Gen	62	30	Indep	Yes[1]	R N	1902
Lowell 110 296—Middlesex							
Chelmsford Street Hospital	Gen	100	100	City	No	Lay	1836
Lowell Corporation Hosp ▲	Gen	100	66	Indep	Yes[1]	M D	1839
Lowell General Hospital ★▲	Gen	106(a)	60	Indep	Yes[1]	R N	1893
Lowell Tuberculosis Hosp	TB Iso	81	50	City	No	M D	1920
St John's Hospital ★▲	Gen	126	100	Church	Yes[1]	Lay	1867
Shaw Hospital	Gen	18	6	Indiv	No	Lay	1920
Ludlow 7,470—Hampden							
Ludlow Hospital Society	Gen	28	10	Indep	No	R N	1909
Lynn 104 000—Essex							
Lynn Hospital ★▲	Gen	154	117	Indep	Yes[1]	R N	1880
Union Hospital	Gen	65	49	Indep	Yes[1]	M D	1900
Malden 52 400—Middlesex							
Malden Contagious Hosp	Iso	20	5	City	No	R N	1905
Malden Hospital ▲	Gen	118	59	Indep	Yes[1]	R N	1890
Marblehead 7 324—Essex							
Children's Island Sanit	Ortho	98	73	Indep	No	R N	1886
Devereux Mansion	Ortho	48	30	Indep	No	R N	1912
Marlboro 16 500—Middlesex							
Marlboro Hospital	Gen	56	31	Indep	No	R N	1890
Medfield 3 867—Norfolk							
Medfield State Hospital	N&M	1 800	1 788	State	Yes[1]	M D	1896
Medford 49 700—Middlesex							
Dearborn Hospital	Incur	19	15	Indiv	No	Lay	1903
Lawrence Memorial Hospital of Medford ▲	Gen	68	44	Indep	Yes	R N	1924
Medford Hospital[3]	Gen	25	10	Indiv	No	Lay	1913
Peckham Private Hospital	Gen	12	9	Indiv	No	Lay	1912
Melrose 20 600—Middlesex							
Melrose Hospital ▲	Gen	65	61	Indep	Yes[1]	R N	1895
New England Sanitarium and Hospital +▲	Gen	140	76	Indep	Yes[1]	M D	1899
Dr Reeves Nervine	N&M	15	12	Indiv	No	M D	1903
Methuen 21 900—Essex							
Henry C Nevins Home for Aged and Incurables	Incur	30	20	Indep	No	Lay	1905
Mary E. Barr Sanitarium	Gen	25	15	Indiv	No	R N	1908
Middleboro 8 214—Plymouth							
Lakeville State Sanatorium	TB	200	126	State	No	M D	1910
St Luke's Hospital of Middleboro	Gen	18	10	Indep	No	R N	1920
Middleton 1 105—Essex							
Essex Sanatorium	TB	260	202	County	Yes[1]	M D	1921
Milford 15 100—Worcester							
Milford Hospital	Gen	45	41	Indep	Yes[1]	R N	1900
Milton 9 382—Norfolk							
Milton Hospital and Convalescent Home	Gen	28	19	Indep	No	R N	18[illegible]
Montague City 761—Franklin							
Farren Memorial Hospital ▲	Gen	58	48	Church	Yes[1]	R N	1900
Nantucket 2 962—Nantucket							
Nantucket Cottage Hosp	Gen	14	10	Cy&Co	No	R N	1914
Natick 13 300—Middlesex							
Leonard Morse Hospital	Gen	43	31	City	Yes[1]	R N	1900
Needham 7 012—Norfolk							
Clover Home and Hospital	Gen	11	7	Indep	No	Lay	191[illegible]
New Bedford 119 539—Bristol							
Acushnet Sanit and Hosp	Gen	25	20	Indiv	No	M D	1907
Ashley Sanitarium	Gen	20	14	Indiv	No	Lay	1890
St Luke's Hospital ★▲	Gen	278	191	Indep	Yes[1]	Lay	1884
Sassaquin Sanatorium +	TB	118	116	Indep	Yes	M D	190[illegible]
Union Hospital	Gen	40	20	Part	No	M D	1915
Newburyport 15 700—Essex							
Anna Jaques Hospital ▲	Gen	50	53	Indep	Yes[1]	R N	18
Newburyport Homeopathic Hospital	Gen	28	12	Indep	No	Lay	1906
Newton 54 700—Middlesex							
Belger Hospital[3]	Gen	14	10	Indiv	No	Lay	1922
Knollwood Sanitarium	N&M	10	5	Indiv	No	M D	1905
Dr Mellus Private Hosp	N&M	20	12	Indiv	No	M D	1910
New England Peabody Home for Crippled Children	Ortho	115	105	Indep	No	R N	1894
Newton Hospital ★▲	Gen	179	116	Indep	Yes[1]	R N	1881
Woodlawn Sanitarium[3]	Epil	12	10	Indiv	No	M D	190[illegible]
Norfolk 1 [illegible]13—Norfolk							
Pondville Hosp at Norfolk	Cancer	90	New	State	No	M D	1927
North Adams 22 800—Berkshire							
North Adams Hospital ▲	Gen	100	50	Indep	Yes[1]	R N	1883
Dr Vrooman's Sanitarium	Al&Dr	25	12	Indiv	No	M D	1897
Northampton 21,700—Hampshire							
Cooley Dickinson Hospital ▲	Gen	118	72	Indep	Yes[1]	R N	1885
Northampton State Hosp +	N&M	1,250	1 169	State	Yes[1]	M D	1858
United States Veterans Hospital No 95 ▲	N&M	452	409	VetBur	Yes	M D	1924
North Dighton 1 220—Bristol							
Mt Hope Hospital	Indus	20	4	Indus	No	R N	1917
North Grafton 2 340—Worcester							
Grafton State Hospital +	N&M	1 661	1 510	State	Yes[1]	M D	1832
North Reading 1 689—Middlesex							
North Reading State Sanat	TB	210	146	State	No	M D	1909
Norwood 14 500—Norfolk							
Norwood Hospital	Gen	80	43	Indep	No	R N	
Oak Bluffs —Plymouth							
Martha's Vineyard Hospital	Gen	10	7	Indep	No	R N	1921
Palmer 9 896—Hampden							
Monson State Hospital	Epil	1 200	1 167	State	Yes	M D	1898
Wing Memorial Hospital	Gen	19	10	Indep	No	R N	1914
Peabody 19 900—Essex							
Josiah B Thomas Hosp ▲	Gen	40	34	City	Yes[1]	Lay	1907
Pittsfield 48 100—Berkshire							
Hillcrest Hospital	Gen	33	33	Indep	Yes[1]	R N	1908
House of Mercy Hosp ★▲	Gen	189	107	Indep	Yes[1]	R N	1874
Pittsfield Anti Tuberculosis Association Hospital	TB	14	10	Indep	No	R N	1909
St Luke's Hospital of Pittsfield	Gen	125	75	Church	Yes[1]	Lay	1918
Plymouth, 13 200—Plymouth							
Jordan Hospital	Gen	66	32	City	Yes[1]	R N	1901
Pocasset 200—Barnstable							
Barnstable County Sanatorium	TB Gen	32	23	County	No	M D	1918
Quincy 63 000—Norfolk							
Granite General Hospital	Mater	10	6	Indiv	No	Lay	1925
Quincy City Hospital ▲	Gen	126	75	City	Yes[1]	R N	1890
Whitehouse Maternity Hosp	Mater	10	8	Indiv	No	M D	1917
Rutland 2 236—Worcester							
Central New England Sanatorium	TB	90	55	Indep	No	M D	1923
Rutland State Sanatorium	TB	370	354	State	Yes[1]	M D	1895
Summit Cottage	TB	10	8	Indiv	No	R N	1916
Wachusett Cottage	TB	12	7	Indiv	No	Lay	1904
Rutland Heights —Worcester							
United States Veterans Hospital No 89 ▲	TB	416	380	VetBur	No	M D	1923
Salem 42 900—Essex							
Health Department Hospital for Contagious Diseases	Iso	60	17	City	No	R N	1905
North Shore Babies Hosp	Chil	50	32	Indep	Yes	R N	190[illegible]
Salem City Home"	Gen	15	8	City	No	Lay	1805
Salem Hospital ★▲	Gen	132	106	Indep	Yes[1]	Lay	1873
Scituate 2 713—Plymouth							
Children's Sunlight Hospital	Chil	70	60	Indep	No	R N	1917
Sharon 3 119—Norfolk							
Sharon Sanatorium	TB	45	43	Indep	No	M D	1891
Shirley 2 394—Middlesex							
Industrial School for Boys	Gen	25	7	State	No	Lay	1909
Somerville 100 400—Middlesex							
Central Hospital	Mater	25	17	Indiv	No	R N	1915
Chandler Street Hospital	Gen	15	5	Indiv	No	R N	1905
City of Somerville Massachusetts Contagious Disease Hospital	Iso	40	12	City	No	M D	190[illegible]
Somerville Hospital ▲	Gen	65	49	Indep	Yes[1]	R N	1891
South Dartmouth 1 815—Bristol							
Sol-e-Mar Hospital	Ortho	50	43	Indep	No	R N	1916
South Hanson 831—Plymouth							
Plymouth County Hospital	TB	130	97	County	No	M D	1919
Springfield, 145 000—Hampden							
Bu call's Nursing Home	Gen	25	18	Indiv	No	Lay	1900
Children's Preventorium of the Hampden County Tuberculosis Association	TB	120	100	Indep	No	Lay	19[illegible]0
City Hospital	Gen	79	70	City	No	R N	191[illegible]
Health Department Hosp	TB Iso	67	[illegible]8	City	No	Lay	1[illegible]
Mercy Hospital ★▲	Gen	200	185	Church	Yes[1]	Lay	18[illegible]

MASSACHUSETTS—Cont City, Pop—County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt MD RN Lay	Year Est
Shriners' Hospital for Crippled Children▲	Ortho	50	[illegible]	Frat	No	RN	1925
Springfield Hospital*▲	Gen	183	139	Indep	Yes[1]	Lay	1869
Springfield Infirmary	Gen	36	20	Indep	No	MD	1920
Wesson Maternity Hospital▲	Mater	52	41	Indep	Yes	RN	1906
Wesson Memorial Hospital▲	Gen	115	85	Indep	Yes[1]	RN	1900
Stockbridge, 1,830—Berkshire							
Austen Riggs Foundation	N&M	38	30	Indep	No	MD	1919
Swampscott, 8 953—Essex							
Florence Crittenton Hope Cottage and Hospital	Mater	12	15	Indep	Yes	MD	1907
Taunton, 39 800—Bristol							
Bethlehem Home Corporation[2]	Chil	50	20	Church	No	Lay	1909
Morton Hospital	Gen	75	58	Indep	Yes[1]	RN	1888
Taunton State Hospital	N&M	1 470	1,453	State	Yes[1]	MD	1854
Tewksbury 4 985—Middlesex							
State Infirmary	Gen	2 600	2 421	State	Yes[1]	MD	1854
Vineyard Haven, 1 500—Dukes							
United States Marine Hospital, No 22▲	Gen	25	21	USPHS	No	MD	1798
Waltham 35 700—Middlesex							
Dr Cousens Private Hospital	Mater	12	8	Indiv	No	MD	1898
Walter E Fernald State School	N&M	1 617	1 586	State	No	MD	1848
Waltham Baby Hospital	Chil	22	6	Indep	No	RN	1900
Waltham Hospital*▲	Gen	131	75	Indep	Yes[1]	RN	1885
Ware 8 620—Hampshire							
Mary Lane Hospital	Gen	34	20	Indep	No	RN	1909
Watertown 26 400—Middlesex							
Watertown Hospital	Gen	8	4	Indiv	No	MD	1914
Wellesley 9 019—Norfolk							
Cedar Lodge	Conv	7	3	Indiv	No	Lay	1912
Channing Sanitarium	N&M	35	[illegible]	Indep	No	MD	1879
Convalescent Home of the Children's Hospital	Gen	70	47	Indep	No	Lay	1890
Schofield Hospital	Conv	10	7	Indiv	No	MD	
Simpson Infirmary of Wellesley College[2]	Gen	18	8	Indep	No	MD	1907
Wiswall Sanatorium	N&M	35	28	Indep	No	MD	1897
Westboro, 6,348—Worcester							
Lyman School Hospital[2]	Gen	30	5	State	No	Lay	1846
Westboro State Hospital	N&M	1 494	1 377	State	Yes[1]	MD	1886
Westfield, 19,500—Hampden							
Noble Hospital▲	Gen	70	40	Indep	Yes[1]	Lay	1893
Westfield State Sanatorium+	TB	310	281	State	No	MD	1910
West Pittsfield, 220—Berkshire							
Frederick S Coolidge Memorial Home	TB	8	6	Indep	No	RN	1916
West Rutland 315—Worcester							
Prison Camp and Hosp[2]	TB	50	45	State	No	Lay	1901
West Springfield 15 800—Hampden							
Holley Rest Home Hospital	Gen	17	8	Indiv	No	RN	1906
Westwood 1 706—Norfolk							
Westwood Lodge	N&M	15	12	Indiv	No	MD	1922
Weymouth 17 800—Norfolk							
Weymouth Hospital	Gen	50	30	Indep	No	RN	1922
Whitinsville, 6 090—Worcester							
Whitinsville Hospital	Indus	18	8	Indus	No	RN	1914
Williamstown, 4 006—Berkshire							
Williams College Infirmary[2]	Gen	21	4	Indep	No	RN	1900
Winchendon 6 173—Worcester							
Millers River Hospital	Gen	25	17	Indep	Yes[1]	MD	1907
Winchester 11 800—Middlesex							
Winchester Hospital	Gen	43	37	Indep	Yes[1]	RN	1893
Winthrop 16,300—Suffolk							
Station Hospital	Gen	43	25	Army	No	MD	1898
Winthrop Community Hosp	Gen	21	12	Indep	No	RN	1923
Woburn 18 800—Middlesex							
Charles Choate Memorial Hospital▲	Gen	40	28	Indep	Yes[1]	RN	1909
Worcester 193 400—Worcester							
Belmont Hospital+	TB, Iso	180	87	City	Yes	MD	1893
Fairlawn Hospital▲	Gen	46	28	Indep	No	RN	1921
Harvard Private Hospital	Gen	18	18	Part	No	RN	1916
Herbert Hall Hospital	N&M	30	18	Indep	No	MD	1872
Louis Pasteur Hospital	Gen	38	16	Indep	Yes	Lay	1925
Maple Hall Sanitarium	Conv	17	15	Part	No	RN	1904
Memorial Hospital*+▲	Gen	185	130	Indep	Yes[1]	RN	1871
St Vincent Hospital*▲	Gen	225	170	Church	Yes[1]	Lay	1893
Worcester City Hospital*+▲	Gen	370	304	City	Yes[1]	MD	1871
Worcester Hahnemann Hospital▲	Gen	82	45	Indep	Yes[1]	RN	1896
Worcester State Hospital	N&M	2 265	2 200	State	Yes[1]	MD	1833
Wrentham 8 214—Norfolk							
Wrentham State School+	N&M	1 377	1 300	State	No	MD	1906

Total registered hospitals in Massachusetts 306 capacity 47 785 average census, 40 202 Hospitals not admitted to the register, 5 capacity 165

MICHIGAN

City Pop—County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt MD RN Lay	Year Est
Addison 416—Lenawee							
Addison Community Hosp	Gen	6	3	Indiv	No	MD	1921
Adrian, 12,600—Lenawee							
Emma L Bixby Hospital	Gen	26	18	City	No	RN	1911
Girls Training School[2]	Gen	19	8	State	No	Lay	1879
Albion 9 261—Calhoun							
James W Sheldon Memorial Hospital▲	Gen	40	20	City	Yes[1]	RN	1924
Alma 7 512—Gratiot							
Brainerd Hospital	Gen	20	3	Indiv	Yes	MD	1905
Carney Private Hospital	Gen	20	11	Indiv	Yes	MD	
Michigan Masonic Home	Gen	[illegible]	12	Frat	No	Lay	1911

MICHIGAN—Cont City Pop—County	Type of Service	Beds	Aver Pts	Control	No Tr Sch	Supt MD RN Lay	Year Est
Alpena 11 101—Alpena							
Donald McRae Hospital	Gen	23	10	Indep	No	RN	1916
Ann Arbor 22 700—Washtenaw							
Ann Arbor Private Hosp	Gen	10	5	Indiv	No	RN	1904
Cowie Hospital	Gen	12	9	Indiv	Yes	RN	
Mercywood Sanitarium	N&M	50	22	Church	No	Lay	1924
St Joseph's Mercy Hosp▲	Gen	185	90	Church	Yes[1]	RN	1900
State Psychopathic Hospital at the University of Michigan	Mental	62	65	State	No	MD	1903
University Hospital*+▲	Gen	1 179	1 007	State	Yes[1]	MD	1869
University of Michigan Health Service Infirmary[2]	Gen	20	12	State	No	MD	1922
Bad Axe 2,140—Huron							
Hubbard Memorial Hosp	Gen	28	21	County	No	RN	1906
Battle Creek 43 500—Calhoun							
American Legion Hosp+	TB	350	186	State	No	MD	1921
Battle Creek Sanitarium*+▲	Gen	1 000	537	Indep	Yes[1]	MD	1866
Calhoun County Public Hospital	TB	55	38	County	No	MD	1924
Leila Y Post Montgomery Hospital	Gen	100	New	Church	Yes[1]	Lay	1927
Maple Street Hospital	Gen	18	8	Indiv	No	MD	1920
Nichols Memorial Hospital▲	Gen	87	65	Indep	Yes[1]	RN	1889
Bay City 49 200—Bay							
Bay City General Hospital	Gen	35	20	City	No	RN	1911
Mercy Hospital▲	Gen	145	77	Church	Yes[1]	RN	1899
Samaritan Hospital	Gen	22	16	Indep	No	MD	1919
Belding 3 911—Ionia							
Belding City Hospital	Gen	12	4	City	No	RN	1920
Benton Harbor 14 300—Berrien							
Benton Harbor Hospital	Gen	50	21	Indep	Yes[1]	RN	1897
Big Rapids 4 558—Mecosta							
Ferris Institute Hospital for Contagious Diseases	Iso	15	8	Indep	No	Lay	1918
Brighton 800—Livingston							
Mellus Hospital	Gen	10	9	Indiv	No	MD	1921
Cadillac 9 734—Wexford							
Mercy Hospital	Gen	50	27	Church	Yes[1]	RN	1908
Wexford County Hospital	Gen TB	25	18	County	No	Lay	1917
Calumet 25 991—Houghton							
Calumet and Hecla Hosp	Indus	21	17	Indus	No	MD	1870
Camp Custer —Kalamazoo							
United States Veterans Hospital No 100▲	N&M	[illegible]	[illegible]	VetBur	No	MD	1924
Caspian 1 912—Iron							
Verona Welfare Hospital	Indus	10	5	Indus	No	MD	1915
Cassopolis 1 385—Cass							
McCutcheon and Harmon Hospital	Gen	8	4	Part	No	MD	1920
Charlevoix 2 218—Charlevoix							
Charlevoix Hospital	Gen	20	6	Indep	No	RN	1920
Charlotte 5 126—Eaton							
Community Hospital	Gen	10	1	Indiv	No	Lay	1925
Coldwater 6 114—Branch							
Branch County Infirmary and Hospital[2]	Gen	8	5	County	No	Lay	1860
State Public School (Hospital and Nursery)	Chil	60	20	State	No	MD	1860
Wade Memorial Hospital	Gen	25	10	Indiv	No	MD	1922
Crystal Falls 3 394—Iron							
Crystal Falls General Hospital	Gen	15	9	Indiv	No	MD	1901
St Luke's Hospital	Gen	14	4	Indiv	No	MD	1907
Dearborn 2 470—Wayne							
Dearborn Sanatorium	Gen	17	3	Indiv	No	RN	1925
St Joseph's Retreat	N&M	400	385	Church	Yes	RN	1860
Detroit 1 290 100—Wayne							
Children's Hospital of Michigan+▲	Chil	250	180	Indep	Yes[1]	RN	1887
City of Detroit Receiving Hospital*+▲	Gen	593	387	City	No	MD	1915
Delray Industrial Hospital	Indus	105	60	Indus	No	Lay	1914
Detroit Eye Ear Nose and Throat Hospital	EENT	100	84	Indiv	No	MD	1915
Detroit House of Correction[3]	Gen	15	12	City	No	Lay	1861
Detroit Tuberculosis Sanatorium+	TB	154	125	Indep	No	MD	1910
Dunbar Memorial Hospital	Gen	65	40	Indep	Yes[1]	Lay	1918
East Side Hospital	Gen	35	25	Indiv	No	RN	1922
Evangelical Deaconess Hospital▲	Gen	115	78	Church	Yes[1]	Lay	1917
Fenwood Hospital	Gen	7	4	Indiv	No	MD	1921
Florence Crittenton Hospital and Home	Gen	51	31	Indep	No	Lay	1897
Grace Hospital*+▲	Gen	363	314	Indep	Yes[1]	MD	1888
Harper Hospital*+▲	Gen	456	436	Indep	Yes[1]	MD	1863
Henry Ford Hospital*+▲	Gen	387	282	Indep	Yes[1]	Lay	1915
Herman Kiefer Hospital+	TB Iso	635	502	City	Yes	Lay	1906
Jefferson Clinic and Diagnostic Hospital+▲	Gen	50	50	Part	No	Lay	1924
Lincoln Hospital	Gen	50	45	Indep	No	MD	1898
Memorial Hospital	Sk&Ca	7	2	Indiv	No	MD	1923
Michigan Mutual Hosp▲	Indus	35	25	Indus	No	MD	1916
Pennsylvania Avenue Sanitarium	Gen	15	6	Indiv	No	Lay	1900
Protestant Orphan Asylum of Detroit[2]	Chil	10	1	Indep	No	Lay	1836
Providence Hospital*▲	Gen	387	370	Church	Yes[1]	RN	1873
St Francis Home for Orphan Boys	Chil	30	12	Church	No	Lay	1889
St Joseph's Mercy Hosp▲	Gen	150	125	Church	Yes[1]	Lay	1912
St Mary's Hospital*▲	Gen	316	260	Church	Yes[1]	RN	1845
United States Marine Hospital No 7▲	Gen	80	70	USPHS	No	MD	1854
William Booth Memorial Hospital	Gen	19	10	Church	No	Lay	1918
Woman's Hospital and Infants' Home+▲	Gen	108	65	Indep	Yes[1]	RN	[illegible]

MICHIGAN—Cont

City Pop —County	Type of Service	Beds	Aver Pts	Control	No Tr Sch	Supt M D R N Lay	Year Est.
Dowagiac 5 440—Cass							
Lee Sanitarium	Gen	25	5	Church	No	R N	1917
Durand 2 672—Shiawassee							
Durand Kings Daughters and Sons Hospital	Gen	9	4	Part	No	R N	1924
East Grand Rapids 800—Kent							
Miller Sanitarium and Hospital	Gen	45	20	Indiv	No	M D	1904
East Lansing 1 889—Ingham							
Hospital of Michigan State College of Agriculture and Applied Science [2]	Gen	35	10	State	No	M D	1920
Eaton Rapids 2 379—Eaton							
Harriet Chapman Hospital	Gen	20	8	Indep	No	R N	1921
Eloise 700—Wayne							
Eloise Hospital for Mental Diseases	N&M	1 789	1 481	County	No	M D	1891
Eloise Infirmary	Gen	1 749	1 667	County	No	M D	1834
Escanaba 13,103—Delta							
Escanaba Isolation Hosp	Iso	6	2	City	No	M D	1916
Laing Hospital	Gen	25	10	Indiv	No	M D	1903
St. Francis Hospital	Gen	125	75	Church	No	Lay	1883
Farmington 853—Oakland							
Convalescent Home	Conv	250	147	Indep	No	R N	1918
Flint 1 3 500—Genesee							
Genesee County Infirmary	Gen	100	85	County	No	Lay	1913
Hurley Hospital★▲	Gen	216	152	City	Yes[1]	Lay	1907
Michigan School for the Deaf-	Gen	35	5	State	No	Lay	1852
St Joseph Hospital	Gen	40	4	Church	No	Lay	1921
Women's Hospital	Gen	39	32	Indep	No	R.N	1917
Fremont 2 180—Newaygo							
Gerber Memorial Hospital	Gen	10	6	Indep	No	R N	1919
Goodrich 300—Genesee							
Goodrich General Hospital	Gen	25	24	Indiv	No	M D	1915
Grand Haven 7 224—Ottawa							
Elizabeth Hatton Memorial Hospital	Gen	20	13	Indep	No	Lay	1919
Grand Rapids, 156 300—Kent							
D A Blodgett Home for Children -	Chil	15	9	Indep	No	R N	1887
Blodgett Memorial Hospital★▲	Gen	132	107	Indep	Yes[1]	M D	1846
Butterworth Hospital★▲	Gen	220	135	Indep	Yes[1]	Lay	1877
Christian Psychopathic Hospital	N&M	150	130	Indep	Yes	M D	1911
City Hospital	Gen	24	10	City	No	M D	1923
M J Clark Memorial Home -	Gen	30	18	Church	No	Lay	1906
Grand Rapids Tuberculosis *Sanatorium*	TB	126	109	City	No	M D	1906
Holland Union Benevolent Home [3]	Gen	6	3	Indep	No	Lay	1912
Kent County Detention Hospital	N&M	30	8	County	No	Lay	1907
Michigan Soldiers Home Hospital [2]	Gen	220	150	State	No	M D	1886
Municipal Isolation Hosp	Iso	65	19	City	No	Lay	1907
St Mary's Hospital★▲	Gen	200	115	Church	Yes[1]	R N	1893
Salvation Army Evangeline Booth Home and Hosp	Mater	40	30	Church	No	Lay	1897
Grayling 2 450—Crawford							
Mercy Hospital	Gen	24	18	Church	Yes[1]	R N	1911
Greenville 4 304—Montcalm							
United Memorial Hospital	Gen	15	1	Indep	No	R N	1905
Grosse Pointe 2 084—Wayne							
Grosse Pointe Hospital	Gen	15	8	Indiv	No	Lay	1925
Grosse Pointe Farms 1 649—Wayne							
Cottage Hospital	Gen	13	10	Indep	No	R N	1917
Hamtramck 87 800—Wayne							
Hamtramck Municipal Hosp	Gen	40	New	City	No	Lay	1927
Hancock 7 527—Houghton							
St Joseph's *Hospital*	Gen	54	41	Church	Yes[1]	Lay	1899
Harbor Beach 1 928—Huron							
Harbor Beach Hospital	Indus	20	8	Indus	No	R N	1920
Harrisville 460—Alcona							
Dr A R Miller's Private Hospital	Gen	56	2	Indiv	No	R N	1910
Hart 1 590—Oceana							
Oceana Hospital	Gen	20	8	Indep	No	R.N	1924
Hastings 5 132—Barry							
Pennock Hospital	Gen	27	15	County	No	R.N	1916
Highland Park 77 000—Wayne							
Highland Park General Hospital★▲	Gen	150	121	City	Yes[1]	M D	1920
Hillsdale 5 476—Hillsdale							
Hillsdale Hospital	Gen	18	8	City	No	R N	1921
Holland 13 300—Ottawa							
Holland Hospital	Gen	16	15	City	No	R N	1917
Houghton 4 456—Houghton							
Houghton County Tuberculosis Sanatorium	TB	50	31	County	No	M D	1912
Howell 2,951—Livingston							
Michigan State Sanatorium for Tuberculosis	TB	228	221	State	No	M D	1905
Hudson 2 464—Lenawee							
Thorn Memorial Hospital	Gen	8	3	City	No	R N	1924
Ionia 6 935—Ionia							
Ionia Community Hospital	Gen	25	5	Indiv	No	Lay	1926
Ionia State Hospital	N&M	629	606	State	No	M D	1885
Michigan State Reformatory -	Gen	64	40	State	No	*Lay*	1877
Iron Mountain 8 251—Dickinson							
Ford Motor Company Industrial Hospital	Indus	6	3	Indus	No	M D	1925
Iron Mountain General Hospital	Gen	45	22	City	No	R N	1911
Iron River 4,295—Iron							
Iron River Hospital	Indus	12	5	Indus	No	R N	1901
Lakeside Hospital	Gen	15	6	Indiv	No	M D	1918
Ironwood 17 700—Gogebic							
Grand View Hospital	TB Gen	90	60	County	No	M D	1921
Newport Hospital	Indus	12	7	Indus	No	M D	1915
Twin City Hospital	Gen	25	10	Indiv	No	Lay	1890
Ishpeming 10 500—Marquette							
Finnish Hospital	Gen	30	7	Indiv	No	M D	1912
Ishpeming Hospital▲	Indus	42	21	Indus	No	R N	187[illegible]
Jackson, 59 700—Jackson							
W A Foote Memorial Hospital★▲	Gen	109	76	City	Yes[1]	R N	1917
Jackson County Contagious Hospital	Iso	20	6	County	No	Lay	1896
Jackson Tuberculosis Hospital	TB	20	17	Cy&Co	No	R N	1915
Mercy Hospital▲	Gen	60	7	Church	Yes[1]	R N	1915
Michigan Odd Fellows Home [2]	Gen	35	55	Frat	No	Lay	1904
Michigan State Prison Hospital	Gen	53	25	State	No	M.D	1839
Kalamazoo 54 500—Kalamazoo							
Borgess Hospital▲	Gen	102	80	Church	Yes[1]	Lay	1896
Bronson Methodist Hosp▲	Gen	63	15	Church	Yes[1]	Lay	1907
Fairmount Hospital	TB Iso	140	90	County	No	M D	1915
Kalamazoo State Hosp +	N&M	2,423	2 400	State	Yes[1]	M D	1859
New Borgess Hospital▲	Gen	122	71	Church	No	R.N	1917
Wilbur Home for Feeble Minded	FeMi	30	24	Indiv	No	Lay	1884
Lake Linden 2,182—Houghton							
Lake Superior General Hosp	Indus	15	8	Indus	No	R.N	1890
Lakeview 886—Montcalm							
Kelsey Hospital	Gen	9	5	Indiv	No	R.N	1908
Lansing 73 200—Ingham							
Boys Vocational School -	Gen	25	11	State	No	M D	1852
Edward W Sparrow Hosp▲	Gen	83	67	Indep	Yes[1]	R.N	1912
Ingham Sanitarium	TB	62	40	County	No	M D	1913
Lansing City Hospital	*Iso*	*40*	*15*	*City*	No	R N	*1921*
St Lawrence Hospital▲	Gen	100	78	Church	Yes[1]	R.N	1915
Lapeer 4 723—Lapeer							
Lapeer City Hospital	Gen	15	7	Part	No	R.N	1924
Michigan Home and Training School	N&M	2 857	2 749	State	No	M D	1895
Laurium 6 696—Houghton							
Calumet Memorial Hospital	Gen	24	18	Indep	Yes[1]	R.N	1905
Ludington 8 810—Mason							
Paulina Stearns Hospital	Gen	21	14	Cy&Co	No	R.N	1907
Manistee, 9 698—Manistee							
Mercy Hospital and Sanit	Gen	53	20	Church	Yes[1]	R N	1890
Marenisco 510—Gogebic							
Charcoal Iron Co Hosp	Indus	10	8	Indus	No	M D	1918
Marquette 13 500—Marquette							
Hospital of the State House of Correction and Branch Prison	Gen	24	6	State	No	M.D	1901
Morgan Heights Sanatorium for Tuberculosis	TB	25	23	County	No	M D	1911
St Luke's Hospital	Gen	55	28	Indep	Yes[1]	R.N	1896
St Mary's Hospital	Gen	80	50	Church	No	Lay	1885
Marshall 4 270—Calhoun							
Oak Lawn Hospital	Gen	12	6	Indep	No	R N	1925
Menominee 8 907—Menominee							
St Joseph's Hospital	Gen	70	50	Church	No	Lay	1885
Mohawk 1 000—Keweenaw							
Mohawk Mine Hospital	Indus	18	11	Indus	No	Lay	1900
Monroe 14 700—Monroe							
Monroe Hospital [3]	*Gen*	*30*	*20*	*Indiv*	*No*	*Lay*	1922
Morenci 1 697—Lenawee							
Hal C Blair Hospital	Gen	5	3	Indiv	No	M.D	1908
Mt Clemens 9 488—Macomb							
Grace Sanitarium and Hosp	Gen	24	15	Indiv	No	M D	1917
St Joseph's Hospital and Sanitarium▲	Gen	100	50	Church	Yes[1]	Lay	1899
United States Army Post Hospital	Gen	50	70	Army	No	M D	1922
Mt Pleasant 4 819—Isabella							
Brondstetter's Private Hospital	Gen	10	5	Indiv	No	R N	1914
Mt Pleasant Indian School Hospital	Gen	55	10	Indian	No	Lay	1895
Munising 5 037—Alger							
Munising Hospital	Gen	21	17	Indep	No	R N	1910
Muskegon 14 300—Muskegon							
Hackley Hospital★▲	Gen	115	75	Indep	Yes[1]	R.N	1904
Mercy Hospital★▲	Gen	100	77	Church	Yes[1]	R.N	1903
Muskegon County Tuberculosis Sanatorium	TB	52	49	County	No	M D	1924
Nahma 710—Delta							
Bay View Hospital	*Indus*	11	6	*Indiv*	*No*	M.D	1914
Negaunee 7 419—Marquette							
Dr Robbins Hospital	Gen	20	5	Indiv	No	M D	1910
Newberry 2 172—Luce							
Newberry State Hospital +	N&M	1 200	1 120	State	Yes	M D	1895
Perry Spinks Hospital	Gen	14	7	Part	No	M.D	1923
Niles 7 311—Berrien							
Pawating Hospital	Gen	33	15	Indep	No	R.N	1926
Northville 1 738—Wayne							
William H Maybury Sanat +	TB	401	305	City	No	M D	1922
East Lawn Sanatorium	TB	65	54	Indiv	No	R N	1920
Norway 4 533—Dickinson							
Penn Hospital	Indus	15	6	Indus	No	R N	1917
Omer 266—Arenac							
Smith Hospital	Gen	9	4	Indiv	No	*M.D*	*1925*
Ontonagon 1,406—Ontonagon							
Ontonagon County Tuberculosis Sanatorium	TB	12	5	County	No	R N	*1917*
Ontonagon Hospital	Gen	12	8	Indiv	No	M.D	1919
Oshtemo 125—Kalamazoo							
Pine Crest Sanatorium	TB	50	45	Indep	No	M D	1919
Owosso 14 500—Shiawassee							
Memorial Hospital▲	Gen	90	61	Indep	Yes[1]	R.N	*1919*

MICHIGAN—Cont

City Pop—County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt MD RN Lay	Year Est
Petoskey 5 064—Emmet							
Lockwood Hospital and Deaconess Home	Gen	21	6	City	No	Lay	1901
Petoskey Hospital	Gen	40	32	Indep	Yes¹	RN	1905
Pinckney 384—Livingston							
Pinckney Sanitarium	Gen	12	6	Indiv	No	MD	1903
Plainwell 2 049—Allegan							
William Crispe Hospital	Gen	10	New	City	No	RN	1927
Pompeii 300—Gratiot							
Pompeii Hospital	Gen	15	9	Indiv	No	Lay	1911
Pontiac 49 800—Oakland							
Oakland County Contagious Hospital	Iso	80	20	County	No	Lay	1918
Oakland County Tuberculosis Sanatorium	TB	157	80	County	No	RN	1923
Pontiac City Hospital	Gen	65	58	City	Yes¹	Lay	1910
Pontiac State Hospital	N&M	1 676	1 655	State	Yes¹	MD	1878
St Joseph's Mercy Hospital	Gen	100	47	Church	Yes¹	Lay	1927
Port Huron 30 700—St Clair							
Emergency Hospital	Gen	86	12	City	No	RN	192
Port Huron Hospital	Gen	50	35	Indep	Yes¹	RN	1901
Powers 249—Menominee							
Delta Menominee Sanat	TB	75	70	County	No	MD	1921
Reed City 1 903—Osceola							
Reed City Hospital	Gen	10	4	Church	No	RN	1919
Royal Oak 6 007—Oakland							
Bentin Maternity Hospital	Mater	9	5	Indiv	No	Lay	1921
Saginaw 73 500—Saginaw							
Saginaw County Tuberculosis Hospital	TB	25	20	County	No	RN	*1908*
Saginaw General Hosp ★▲	Gen	120	97	Indep	Yes¹	Lay	1887
St Mary's Hospital ▲	Gen	78	44	Church	Yes¹	RN	1874
Woman's Hospital	Gen	50	25	Indep	Yes¹	RN	1885
St Clair 3 204—Saint Clair							
St Clair Community Hosp	Gen	12	8	City	No	RN	1907
St Johns 3 925—Clinton							
Clinton County Memorial Hospital	Gen	52	New	Indep	No	RN	1927
St Joseph 7 251—Berrien							
St Joseph Sanitarium	Gen	18	10	Indep	No	RN	1915
St Louis 3 036—Gratiot							
Magnetic Mineral Springs and Sanitarium	Conv	50	30	Indep	No	Lay	1888
Sandusky 1 228—Sanilac							
Tweedie Hospital	EENT	6	3	Part	No	MD	1921
Sault Ste Marie 12 096—Chippewa							
Chippewa County Memorial Hospital	Gen	52	30	County	Yes¹	Lay	1921
Station Hospital	Gen	20	18	Army	No	MD	18[illegible]
Shelby 1 288—Oceana							
Shelby Community Hospital	Gen	10	5	Indep	No	RN	1925
South Haven 3 829—Van Buren							
City Hospital	Gen	30	20	City	No	RN	1907
Stambaugh 2 263—Iron							
Stambaugh Hospital	Gen	12	6	Indiv	No	MD	1910
Sturgis 5 995—St Joseph							
Sturgis Memorial Hospital	Gen	32	25	City	No	RN	1925
Three Rivers 5 209—St Joseph							
City Hospital	Gen	25	12	City	No	RN	1923
Traverse City 10 925—Grand Traverse							
James Decker Munson Hosp	Gen	50	28	State	Yes¹	MD	1925
Traverse City State Hosp +	N&M	2 111	2 085	State	Yes¹	MD	1885
Trimountain 2,500—Houghton							
Copper Range Hospital	Indus	25	14	Indus	No	RN	1900
Vicksburg 1 946—Kalamazoo							
Franklin Memorial Hospital	Gen	14	5	City	No	Lay	1923
Wahjamega — Tuscola							
Michigan Farm Colony for Epileptics +	Epil	900	846	State	No	MD	1914
Wakefield 4,151—Gogebic							
Wakefield General Hospital	Indus	12	6	Indus	No	RN	1910
Wyandotte 25 300—Wayne							
Wyandotte General Hosp ▲	Gen	75	43	City	No	RN	1926
Ypsilanti 7 413—Washtenaw							
Beyer Memorial Hospital	Gen	25	11	City	No	Lay	1918
Dr Sheppard's Sanitarium	N&M	6	2	Indiv	No	MD	1925

Total registered hospitals in Michigan 229 capacity 23 308 average census 26 412 Hospitals not admitted to the register 19 capacity 530

MINNESOTA

City Pop—County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt MD RN Lay	Year Est
Ada 1 411—Norman							
Norman County Memorial Hospital	Gen	10	6	Indep	No	RN	1925
Ah-gwah-ching — Cass							
Minnesota State Sanatorium for Consumptives	TB	315	290	State	No	MD	1907
Aitkin, 1 490—Aitkin							
Beecroft Hospital	Mater	10	3	Indiv	No	Lay	1924
Albert Lea 10 728—Freeborn							
City and County Hospital	Gen	72	40	Cy&Co	Yes¹	RN	1909
Alexandria 3 388—Douglas							
St Luke's Hospital	Gen	20	10	Indiv	No	RN	1898
Tanquist Hospital	Gen	12	New	Indiv	No	RN	1927
Anoka 4 287—Anoka							
Anoka State Asylum	N&M	1 060	1 033	State	No	MD	1900
Gates Hospital	Gen	11	5	Indiv	No	MD	1923
Appleton 1 579—Swift							
Kaufman Hospital	Gen	18	8	Indiv	No	MD	1918
Austin 12 200—Mower							
St Olaf Lutheran Hospital	Gen	46	33	Church	Yes¹	RN	1896
Barrett 358—Grant							
Powers Hospital	Gen	10	4	Indiv	No	RN	1915
Battle Lake 628—Ottertail							
Ottertail County Sanat	TB	46	43	County	No	MD	1912
Bemidji 7 086—Beltrami							
Lutheran Hospital	Gen	45	18	Church	No	RN	1908
Benson 2 111—Swift							
Swift County Hospital	Gen	17	10	Indep	No	Lay	1912
Biwabik, 2 024—St Louis							
Biwabik Hospital	Gen	12	7	Indiv	No	MD	1892
Blue Earth 2 568—Faribault							
Blue Earth Hospital	Gen	10	4	Indiv	No	MD	1913
Braham 511—Isanti							
Braham Hospital	Gen	12	7	Indiv	No	RN	1908
Brainerd 9 591—Crow Wing							
St Joseph's Hospital	Gen	58	25	Church	No	Lay	1900
Breckenridge 2 401—Wilkin							
St Francis Hospital	Gen	50	40	Church	Yes¹	Lay	1898
Buffalo 1 458—Wright							
Catlin Hospital	Gen	12	9	Indiv	No	Lay	1919
Buhl 2 007—St Louis							
Shaw Hospital	Gen	36	5	Indiv	No	MD	1901
Caledonia 1 570—Houston							
Caledonia Hospital	Gen	25	8	Indiv	No	MD	1901
Cambridge 1 080—Isanti							
Minnesota Colony for Epileptics	Epil	280	60	State	No	Lay	1925
Canby 1 754—Yellow Medicine							
John Swenson Mem Hosp	Gen	20	8	City	No	Lay	1914
Cannon Falls 1 315—Goodhue							
Mineral Springs Sanatorium	TB	40	40	County	No	MD	1915
Chisholm 9 039—St Louis							
Rood Hospital	Gen	20	8	Indiv	No	MD	1913
Cloquet 5 127—Carlton							
Fond du Lac Indian Hosp	Gen	20	12	Indian	No	MD	1912
Raiter Hospital	Gen	20	15	Part	No	MD	1906
Cokato 1 014—Wright							
Cokato Hospital	Gen	10	5	Indiv	No	Lay	1913
Coleraine 1 300—Itasca							
Coleraine Hospital	Gen	15	3	Indiv	No	MD	1907
Collegeville — Stearns							
St John's University Hosp	Gen	40	2	Indep	No	Lay	*
Crookston 6 825—Polk							
Bethesda Hospital	Gen	45	29	Church	Yes¹	RN	1896
St Vincent's Hospital	Gen	41	20	Church	Yes¹	Lay	1902
Sunnyrest Sanatorium	TB	64	60	County	No	MD	1916
Crosby 3 400—Crow Wing							
Cuyuna Range Hospital	Indus	13	6	Indus	No	MD	1913
Miners Hospital	Indus	30	8	Indiv	No	MD	1914
Dawson 1 311—Lac qui Parle							
Dawson Surgical Hospital	Gen	25	16	Indep	Yes¹	RN	1914
Deerwood 532—Crow Wing							
Deerwood Sanatorium	TB	25	23	County	No	MD	1918
Dodge Center 921—Dodge							
Dodge Center Hospital	Gen	6	2	Indiv	No	Lay	1925
Duluth 112 600—St Louis							
Children's Home Society	Chil	12	6	Indep	No	Lay	1883
Contagious Hospital	Iso	28	3	City	No	RN	1906
Duluth Hospital	Gen	20	4	Indiv	Yes	RN	1906
St Louis County Hospital	Gen	75	65	County	No	Lay	1910
St Luke's Hospital ★▲	Gen	237	164	Indep	Yes¹	Lay	1879
St Mary's Hospital ★▲	Gen	250	230	Church	Yes¹	Lay	1888
Webber Hospital	Gen	40	30	Indiv	No	MD	1919
Ellsworth 667—Nobles							
Ellsworth Hospital	Gen	10	2	Indiv	No	MD	1922
Ely 4 902—St Louis							
Contagious Hospital	Iso	16	1	City	No	MD	1925
Shipman Hospital	Gen	15	5	Part	No	MD	1892
Eveleth 7 205—St Louis							
Eveleth Detention Hosp ³	Iso	14	1	City	No	MD	1910
More Hospital ▲	Gen	30	15	Indiv	No	Lay	1895
Fairmont 4 650—Martin							
Fairmont Surgical Hospital	Gen	12	6	Part	No	MD	1914
Faribault 12 500—Rice							
Minnesota School for the Blind ²	Gen	15	1	State	No	Lay	1866
Minnesota School for the Deaf ²	Gen	20	2	State	No	Lay	1863
Minnesota School for Feeble Minded and Colony for Epileptics	N&M	2 000	1,937	State	No	MD	1879
St Lucas Deaconess Hosp	Gen	44	36	Church	Yes¹	Lay	1905
Farmington 1 449—Dakota							
Sanford Hospital	Gen	16	10	Indiv	No	RN	1915
Fergus Falls 7 581—Ottertail							
Fergus Falls State Hospital	N&M	1,700	1 600	State	Yes¹	MD	1889
George B Wright Memorial Hospital	Gen	45	30	Indep	Yes¹	RN	190
St Luke's Hospital ▲	Gen	45	30	Church	Yes¹	RN	1903
Ft Snelling — Hennepin							
Station Hospital	Gen	90	40	Army	No	MD	1825
United States Veterans Hospital No 106▲	Gen	541	New	VetBur	No	MD	1927
Fosston 1 014—Polk							
Fosston Hospital	Gen	20	6	Part	No	RN	1900
Frazee 1 277—Becker							
Frazee Hospital	Gen	8	4	Indiv	No	MD	1907
Gaylord 783—Sibley							
Gaylord Hospital	Gen	8	4	Indiv	No	MD	1892
Glenwood 2 187—Pope							
Glenwood Hospital	Gen	10	3	Part	No	RN	1912
Graceville 1 072—Big Stone							
Western Minnesota Hosp	Gen	35	21	Indep	Yes¹	RN	1914
Grand Rapids 2 914—Itasca							
Itasca Hospital	Gen	40	25	County	No	RN	1918
Granite Falls 1 611—Yellow Medicine							
Riverside Sanatorium	TB	50	48	County	No	RN	1917
Greenbush 310—Roseau							
General Hospital	Gen	6	2	Indiv	No	Lay	1927
Grygla 155—Marshall							
Grygla Community Hosp	Gen	20	4	Indep	No	RN	1922
Hallock 1 012—Kittson							
*Kittson War Veterans Me*morial Hospital	Gen	23	20	County	No	RN	1923

MINNESOTA—Cont City Pop—County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt MD RN Lay	Year Est
Hastings 4 571—Dakota							
Hastings State Asylum	N&M	1 017	990	State	No	Lay	1900
Latto Hospital	Gen	20	10	City	No	R.N	1914
Hendricks 731—Lincoln							
Hendricks Hospital	Gen	14	9	Indep	No	R N	1926
Heron Lake 922—Jackson							
Southwestern Minnesota Hospital	Gen	14	5	Indiv	No	M D	1903
Hibbing 18 400—St Louis							
Adams Hospital	Gen	26	11	Indiv	No	M.D	1902
Hibbing Detention Hosp	Iso	35	5	City	No	R.N	1911
Rood Hospital	Gen	45	18	Indiv	No	M.D	1903
Hutchinson 3 379—McLeod							
Hutchinson Community Hospital	Gen	24	14	Indep	No	R N	1920
International Falls 3 448—Koochiching							
Craig Hospital	Gen	20	10	Indiv	No	M D	1920
Northern Minnesota Hosp	Gen	50	21	Indep	Yes[1]	M D	1910
Jackson 2 144—Jackson							
Halloran Hospital	Gen	10	4	Indiv	No	M D	1925
Lake City 2,846—Wabasha							
Lake City Hospital	Gen	19	12	Indep	No	Lay	1916
Lake Park 700—Becker							
Lake Park Orphans Home	Chil	12	2	Church	No	Lay	1895
Sand Beach Sanatorium	TB	44	37	County	No	M D	1912
Litchfield 2 790—Meeker							
Litchfield Hospital	Gen	30	16	Indep	Yes[1]	R N	1908
Little Falls 5 500—Morrison							
St Gabriel s Hospital ▲	Gen	43	25	Church	Yes[1]	R N	1891
Long Prairie 1 346—Todd							
Long Prairie Hospital	Gen	10	4	Part	No	M D	1916
Luverne 2 540—Rock							
Luverne Hospital	Gen	15	4	Part	No	Lay	1905
Madelia 1 447—Watonwan							
Madelia Hospital	Gen	12	8	Indiv	No	R N	1918
Madison 1 838—Lacqui Parle							
Ebenezer Hospital	Gen	18	6	Church	Yes	R N	1901
Mankato 13 900—Blue Earth							
Immanuel Lutheran Hosp	Gen	63	46	Church	Yes[1]	R N	1904
Mankato Contagious Hosp	Iso	18	3	City	No	Lay	1912
St Joseph s Hospital	Gen	130	45	Church	No	R N	1897
Marshall 3 092—Lyon							
Marshall Hospital	Gen	25	10	Indiv	Yes	M D	1911
Melrose 2 529—Stearns							
Melrose Hospital	Gen	12	7	Indiv	No	M D	
Minneapolis 433 600—Hennepin							
Abbott Hospital ★▲	Gen	106	80	Church	Yes[1]	R N	1902
Asbury Hospital ★▲	Gen	143	122	Church	Yes[1]	Lay	1892
Bethany Home	Mater	21	25	Indep	Yes	Lay	1875
Convalescent & Rest Home	Conv	7	5	Indiv	No	Lay	1923
Downtown Surgery	LINT	11	5	Indep	No	R N	1921
Eitel Hospital ★▲	Gen	120	92	Indiv	Yes[1]	R N	1912
Fairview Hospital ★▲	Gen	175	112	Church	Yes[1]	Lay	1916
Hill Crest Surgical Hosp ▲	Gen	50	39	Indep	Yes[1]	R N	1910
Home for Convalescents	Conv	17	10	Indep	No	Lay	1912
Homewood Hospital	Gen	18	10	Part	No	R N	1910
Lutheran Deaconess Home and Hospital ★▲	Gen	126	90	Church	Yes[1]	Lay	1889
Maternity Hospital ▲	Mater	106	68	Indep	Yes[1]	Lay	1887
Minneapolis General Hospital ★+▲	Gen	604	510	City	Yes	M D	1887
Minneapolis Sanitarium	N&M	12	8	Indiv	No	Lay	1910
Minnesota Sanitarium	Conv	20	15	Indiv	No	M D	1913
Minnesota Soldiers Home	Gen	13	6	State	No	M D	1887
Northwestern Hospital ★▲	Gen	160	115	Indep	Yes[1]	R.N	1883
Parkview Sanatorium	Gen	120	118	City	No	M D	1908
Rest Home	Conv	17	14	Indiv	No	Lay	1916
Rest Hospital	Conv	17	15	Part	No	R N	1893
Riverview Hospital	N&M	8	12	Indiv	No	Lay	1916
St Andrew s Hospital of the German Lutheran Church	Gen	30	22	Church	Yes[1]	Lay	1911
St Barnabas Hospital ★▲	Gen	143	100	Church	Yes[1]	R N	1870
St Mary s Hospital ★▲	Gen	220	181	Church	Yes[1]	R N	1887
Shriners Hospital for Crippled Children ▲	Ortho	62	60	Frat	No	R N	1923
South Side Sanitarium	N&M	18	9	Indiv	No	M D	1912
Swedish Hospital ★▲	Gen	235	206	Indep	Yes[1]	Lay	1898
Thomas Tubercular Hosp	TB	60	51	Indep	Yes	Lay	1907
United States Veterans Hospital No 68	TB	308	170	VetBur	No	M D	1921
University Hospital ★+▲	Gen	280	260	State	Yes[1]	Lay	1909
Montevideo 4 419—Chippewa							
Montevideo Hospital	Gen	30	20	Indep	Yes[1]	R.N	1908
Moorhead 5 720—Clay							
St Ansgars Hospital	Gen	50	28	Church	Yes[1]	Lay	1911
Mountain Lake 1 309—Cottonwood							
Bethel Deaconess Hospital	Gen	30	28	Church	Yes	R N	1906
Mudbaden — Scott							
Mudbaden Sulphur Springs	Conv	100	50	Indep	No	M D	1901
New Prague 1 540—Le Sueur							
New Prague Community Hospital	Gen	15	5	Indep	No	R N	1924
New Ulm 6 745—Brown							
Loretto Hospital	Gen	45	23	Church	No	Lay	1910
Union Hospital	Gen	40	25	Indep	Yes[1]	R N	1914
Nopeming — St Louis							
Nopeming Sanatorium +	TB	250	212	County	Yes[1]	M D	1911
Northfield 4 023—Rice							
Northfield Hospital	Gen	12	2	City	Yes	R N	1910
Oak Terrace — Hennepin							
Glen Lake Sanatorium +▲	TB	655	650	County	Yes[1]	M D	1916
Onigum — Cass							
Onigum Chippewa Sanat	TB Gen	120	73	Indian	No	M D	1921
Ortonville 1 774—Big Stone							
Ortonville Evangelical Hosp	Gen	16	15	Church	Yes[1]	R.N	1906
Owatonna 7 252—Steele							
Nelson Hospital	Gen	7	2	Indiv	No	M D	1923
Owatonna City Hospital	Gen	24	17	City	Yes[1]	R.N	1900
State School for Dependent and Neglected Children	Gen	40	10	State	No	Lay	1885
Parkers Prairie 570—Ottertail							
Leibold Hospital	Gen	12	4	Indiv	No	M.D	1915
Paynesville 1 060—Stearns							
Pilon Hospital	Gen	15	5	Indiv	No	M.D	1893
Pelican Rapids, 1 156—Ottertail							
Dr Boysen s Hospital	Gen	12	3	Indiv	No	M D	1911
Pelican Rapids Hospital	Gen	8	3	Indiv	No	M.D	1908
Perham 1 370—Ottertail							
St James' Hospital	Gen	30	15	Church	No	Lay	1902
Pipestone 3 325—Pipestone							
Ashton Memorial Hospital	Gen	38	19	Cy&Co	Yes[1]	R.N	[illegible]
Pipestone Indian School Hospital	Gen	13	3	Indian	No	M D	[illegible]
Pokegama — Pine							
Pokegama Sanatorium	TB	58	47	Indep	Yes	M D	1905
Princeton 1 685—Mille Lacs							
Northwestern Hospital	Gen	35	15	Indep	No	Lay	1900
Puposky 75—Beltrami							
Lake Julia Tuberculosis Sanatorium	TB	48	40	County	No	M.D	1915
Redlake 214—Beltrami							
Red Lake Indian Hospital	Gen	25	14	Indian	No	M.D	1916
Red Wing 8 637—Goodhue							
Minnesota State Training School for Boys -	Gen	20	9	State	No	Lay	1868
Red Wing Hospital	Gen	40	19	City	Yes	Lay	1891
St John s Hospital	Gen	60	37	Indep	Yes[1]	Lay	1903
Redwood Falls 3 421—Redwood							
Redwood Falls Hospital	Gen	15	6	Part	No	R.N	1915
Richmond 651—Stearns							
Richmond Hospital	Gen	8	4	Indep	No	M D	1919
Rochester 17 700—Olmsted							
Cascade Sanitarium	Conv	15	8	Indiv	No	M D	1913
Colonial Hospital ▲	Gen	247	215	Indep	Yes	Lay	1915
Granger Hospital[3]	Gen	16	8	Indiv	No	Lay	[illegible]
Kahler Hospital ▲	Gen	203	169	Indep	Yes[1]	Lay	[illegible]
Rochester State Hospital	N&M	1 576	1 833	State	Yes[1]	M D	1879
St Mary s Hospital ▲	Gen	500	488	Church	Yes[1]	R.N	1889
Samaritan Hospital	Conv	140	95	Church	No	Lay	1920
Worrell Hosp and Annex ▲	LLNT	187	156	Indep	Yes	Lay	1918
Roseau 1 012—Roseau							
Budd Hospital	Gen	15	6	Indiv	No	Lay	1914
St Cloud 19 100—Stearns							
Minnesota State Reformatory -	Gen	18	15	State	No	Lay	1889
St Cloud Orphans Home -	Chil	10	1	Church	No	Lay	1921
St Joseph s Sanitarium	TB	15	10	Church	No	R N	1919
St Raphael s Hospital ▲	Gen	75	69	Church	Yes[1]	R N	1885
United States Veterans Hospital No 101 ▲	N&M	330	339	VetBur	No	M.D	1924
St James 2,673—Watonwan							
St James Hospital and Home for Aged	Gen	20	8	Church	No	Lay	1910
St Paul 248 100—Ramsey							
Ancker Hospital ★+▲	Gen	1 050	631	Cy&Co	Yes[1]	M D	1871
Bethesda Hospital ★	Gen	110	81	Church	Yes[1]	Lay	1880
Charles T Miller Hosp ★▲	Gen	196	130	Indep	Yes	M.D	1920
Children s Preventorium of Ramsey County	TB	75	68	Indep	No	R.N	1915
Gillette State Hospital for Crippled Children +▲	Ortho	250	205	State	Yes[1]	Lay	1897
Junior League Convalescent Home for Women	Conv	12	10	Indep	No	R.N	1923
Midway Hospital ★▲	Gen	115	82	Church	Yes[1]	R N	[illegible]
Mounds Park Sanitarium ★▲	Gen	125	109	Church	Yes[1]	R N	1907
Northern Pacific Beneficial Association Hospital ★+▲	Gen	153	112	Indep	Yes	Lay	1881
Mrs Robbins Rest Home	N&M	12	10	Indiv	No	R N	1914
Roosevelt Hospital	Gen	56	18	Church	No	R.N	[illegible]
St John s Hospital ▲	Gen	100	61	Church	Yes[1]	R.N	1911
St Joseph s Hospital ★▲	Gen	226	152	Church	Yes[1]	R N	[illegible]
St Luke s Hospital ★▲	Gen	150	113	Church	Yes[1]	Lay	[illegible]
St Paul s Hospital ▲	Gen	100	61	Church	Yes[1]	Lay	[illegible]
Salvation Army Home and Hospital	Mater	50	50	Church	No	Lay	[illegible]
West Side General Hospital	Gen	28	20	Church	Yes[1]	Lay	1915
St Peter 4 335—Nicollet							
Covell Hospital	Gen	20	New	Indiv	No	M D	1927
St Peter State Hospital +	N&M	1 686	1 542	State	Yes[1]	M D	1866
Sauk Center 2 699—Stearns							
Sauk Center Hospital	Gen	7	3	Indiv	No	M D	[illegible]
Sebeka 585—Wadena							
Sebeka Hospital	Gen	12	6	Indiv	No	M.D	1915
Shakopee 1 988—Scott							
Mudcura Sanitarium	Conv	100	65	Indep	Yes	M D	[illegible]
Slayton 1 045—Murray							
Home Hospital	Gen	30	15	Part	Yes[1]	R N	1914
Soudan — St Louis							
Soudan Hospital	Gen	10	3	Part	No	M D	1900
Springfield 1 819—Brown							
St John s Hospital	Gen	15	7	Church	No	Lay	1901
Spring Grove 753—Houston							
Spring Grove Hospital	Gen	11	6	Indep	No	R N	1916
Starbuck 824—Pope							
Minnewaska Hospital	Gen	16	9	Indep	No	Lay	1901
Stillwater 7 735—Washington							
Lakeview Memorial Hosp	Gen	44	23	Cy&Co	Yes[1]	R N	1880
Minnesota State Prison Hospital -	Gen	34	25	State	No	M D	1848
Thief River Falls 4 685—Pennington							
Oakland Park Sanatorium Pennington	TB	54	38	County	No	M D	1917
Physicians Hospital	Gen	24	9	Indep	No	R.N	[illegible]
Tracy 2 463—Lyon							
Clinic Hospital	Gen	14	New	Part	No	R N	[illegible]
Tracy Hospital	Gen	12	9	Part	No	R.N	1916

MINNESOTA—Cont City Pop—County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt M D R N Lay	Year Est
Two Harbors 4 546—Lake							
Burns & Christensen Hosp	Gen	38	20	Part	No	M D	1915
Tyler 858—Lincoln							
Tyler Hospital	*Gen*	*16*	*10*	*Indep*	No	*R N*	*1919*
Virginia 16 400—St Louis							
City Detention Hospital	Iso	37	12	City	No	M D	1903
Lemont Hospital	Gen	20	15	Indiv	No	M D	1901
McIntyre Hospital	Gen	25	10	Indiv	No	R N	1912
Wabasha 2 622—Wabasha							
Buena Vista Sanatorium	TB	24	23	County	No	M D	1917
St Elizabeth's Hospital	Gen	45	22	Church	No	Lay	1898
Wadena 1 820—Wadena							
Fair Oaks Lodge Sanat	TB	35	33	County	No	M D	1918
Wesley Hospital of Wadena	Gen	45	23	Church	Yes¹	R N	1922
Walker 785—Cass							
Walker Hospital	Gen	27	20	Indiv	No	M D	1900
Warren 1,752—Marshall							
Hedgewood Hospital	Gen	5	2	Indiv	No	M D	1917
Warren Hospital	Gen	46	20	Church	No	R N	1905
Waseca 3 308—Waseca							
Waseca Memorial Hospital	Gen	26	11	City	No	R N	1922
Watertown 531—Carver							
Cottage Hospital	Gen	8	5	Indiv	No	Lay	1905
Watkins 454—Meeker							
Brigham Hospital	Gen	7	2	Indiv	No	M D	1921
Wheaton 1 337—Traverse							
Wheaton Hospital	Gen	12	6	Indiv	No	M D	1905
White Earth 415—Becker							
White Earth Indian Hosp	Gen	20	15	Indian	No	Lay	1912
Willmar 5 892—Kandiyohi							
Central Hospital	Gen	25	14	Part	Yes	M D	1916
Willmar Hospital	Gen	35	24	Indep	Yes¹	M D	1907
Willmar State Asylum	N&M	651	676	State	No	M D	1912
Windom 2 123—Cottonwood							
Windom Deaconess Hospital	Gen	14	8	City	No	R N	1921
Winnebago 1 641—Faribault							
Winnebago Community Hospital	Gen	10	5	Indiv	No	R N	1926
Winona 19 500—Winona							
Winona General Hospital ▲	Gen	113	50	Indep	Yes¹	R N	1894
Worthington 3 481—Nobles							
Southwestern Minnesota Tuberculosis Sanatorium	TB	54	52	County	No	M D	1915
Worthington Clinic Hosp	Gen	25	5	Indep	No	R N	1918
Worthington Hospital	Gen	10	6	Indiv	No	M D	1926

Total registered hospitals in Minnesota 233 capacity 24 551 average census 19 768 Hospitals not admitted to the register 11 capacity [illegible]

MISSISSIPPI City, Pop—County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt M D R N Lay	Year Est
A & M College 220—Oktibbeha							
James Z George Memorial Hospital ▲	Gen	44	6	State	No	M D	
Aberdeen 4 071—Monroe							
Acker Hospital	Gen	7	1	Indiv	No	M D	1921
Coleman Hospital	Gen	20	3	Indiv	No	M D	1920
Amory 2 861—Monroe							
Gilmore Sanitarium	Gen	30	16	Indep	Yes²	M D	1916
Biloxi 12 900—Harrison							
Biloxi City Hospital	Gen	55	18	Indep	Yes¹	Lay	1918
Jefferson Davis Soldiers Home ~	Gen	80	70	State	No	Lay	1904
Booneville 1 495—Prentiss							
North East Mississippi Hosp	Gen	50	16	Indep	Yes¹	M D	1919
Brookhaven 4 706—Lincoln							
King's Daughters Hospital	Gen	50	14	Church	Yes¹	R N	1914
Cary, 109—Sharkey							
Dr W C Pool's Sanit	Gen	6	3	Indiv	No	M D	1923
Clarksdale 7 552—Coahoma							
Clarksdale Hospital	Gen	19	6	Indep	No	R N	1923
Columbia 2 825—Marion							
Columbia Hospital ▲	Gen	50	30	Indiv	Yes¹	M D	1916
Columbus 11 500—Lowndes							
Columbus Hospital	Gen	35	12	Indiv	No	M D	1905
Fite Hospital	Gen	35	12	Indiv	Yes¹	M D	1921
Corinth 4 946—Alcorn							
McRae Hospital	Gen	70	17	Indep	Yes¹	M D	1923
Electric Mills 600—Kemper							
George Hixon Mem Hosp	Indus	75	50	Indus	Yes¹	R N	
Ellisville 1 681—Jones							
Mississippi School and Colony for Feebleminded	N&M	137	125	State	No	M D	1920
Greenville 15 400—Washington							
King's Daughters Hospital	Gen	50	30	Indep	Yes	Lay	
King's Daughters Hospital ▲	Gen	100	60	Indep	Yes¹	R N	1905
Greenwood 7 793—Leflore							
Delta Colored Hospital	Gen	20	12	Indiv	No	M D	1925
Greenwood Colored Hospital	Gen	14	9	Indiv	No	M D	1912
King's Daughters Hospital	Gen	35	16	Church	Yes¹	R N	1908
Grenada 3 402—Grenada							
Grenada Hospital	Gen	50	11	Part	Yes¹	M D	1923
Gulfport 8 157—Harrison							
King's Daughters Hospital ▲	Gen	75	25	Church	Yes¹	R N	1906
United States Veterans Hospital No 74 ▲	Gen	425	269	VetBur	No	M D	1921
Hattiesburg 14 200—Forrest							
Mary Ross Hospital	Gen	16	6	Church	No	R N	1923
Methodist Hospital	Gen	75	45	Church	Yes¹	Lay	1902
South Mississippi Infirmary ▲	Gen	60	25	Indiv	Yes¹	M D	1901
Houston 1 408—Chickasaw							
Houston Hospital ▲	Gen	47	14	Indep	Yes¹	M D	1919
Jackson 28 900—Hinds							
Jackson Infirmary ▲	Gen	60	25	Indep	Yes¹	R N	1916
Medical and Surgical Clinic	Gen	40	15	Indiv	Yes¹	M D	1923
Mississippi Baptist Hosp ▲	Gen	75	50	Church	Yes¹	Lay	1909
Mississippi Methodist Orphans Home ~	Chil	6	2	Church	No	Lay	1895

MISSISSIPPI—Cont City Pop—County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt M D R N Lay	Year Est
Mississippi State Charity Hospital ★▲	Gen	65(a)	50	State	Yes¹	M D	1912
Mississippi State Insane Hospital	N&M	2 250	2 138	State	No	M D	1851
Old Ladies' Home ³	Gen	9	5	Indep	No	Lay	1902
Laurel 16 200—Jones							
Dr Roland Cranford's Hospital	Gen	75	41	Indiv	Yes¹	Lay	1910
South Mississippi Charity Hospital	Gen	130	95	State	Yes¹	M D	1917
Lexington 1 792—Holmes							
Holmes County Community Hospital	Gen	12	4	Cy & Co	No	R N	1916
Lumberton 2 192—Lamar							
Lumberton Hospital	Indus	60	30	Indus	Yes¹	M D	1924
McComb 6 237—Pike							
McComb City Hospital	Gen	25	20	Indiv	Yes¹	R N	1911
McComb Infirmary	Gen	30	17	Indiv	Yes¹	M D	1924
Meridian 24 500—*Lauderdale*							
East Mississippi Insane Hospital	N&M	850	825	State	No	M D	1882
Dr Hairston's Hospital ▲	Gen	30	25	Indiv	No	M D	1902
King's Daughters Tuberculosis Hospital	TB	44	15	Church	No	Lay	1913
Matty Hersee Hospital ▲	Gen	132	85	County	Yes¹	M D	1903
Meridian Sanitarium	Gen	50	15	Indep	Yes¹	M D	1911
Rush's Infirmary ▲	Gen	55	15	Indiv	Yes¹	Lay	1915
Natchez, 13 200—Adams							
Chamberlain Rice Hospital	Gen	75	25	Indep	Yes¹	Lay	1925
Natchez Charity Hospital ★	Gen	125	86	State	Yes¹	M D	1840
Natchez Sanatorium	Gen	35	23	Indep	Yes¹	R N	1907
New Albany 2 531—Union							
Mayes Hospital	Gen	30	15	Indiv	No	M D	1912
Newton 1 601—Newton							
Newton Sanitarium	Gen	20	7	Indiv	Yes	M D	1907
Oxford 2,150—Lafayette							
Bramlett Hospital	Gen	25	8	Indep	Yes¹	M D	1918
Oxford Hospital	Gen	30	10	Indep	Yes¹	M D	1920
Pass Christian 2 357—Harrison							
Dr Gallant's Private Hosp	Gen	30	15	Indiv	No	Lay	1924
Philadelphia 1 669—Neshoba							
Philadelphia Hospital	Gen	15	6	Indiv	No	M D	1927
Picayune 2,479—Pearl River							
Martin Sanatorium	Gen	23	10	Indiv	No	M D	1920
Poplarville 1 290—Pearl River							
Pearl River County Hosp	Gen	20	7	Indiv	Yes¹	M D	1920
Rosedale 1 696—Bolivar							
Virginia McGuire Memorial Hospital	Gen	8	3	Church	No	Lay	1898
Sanatorium — Simpson							
Mississippi State Tuberculosis Sanatorium ▲	TB	480	310	State	No	M D	1917
Tupelo 5 055—Lee							
Tupelo Hospital ▲	Gen	35	15	City	Yes¹	R N	1920
Tylertown 1 116—Walthall							
Tylertown Hospital	Gen	16	9	Indiv	Yes¹	R N	1926
University — Lafayette							
Univ of Mississippi Hosp	Gen	50	15	State	No	M D	1908
Vicksburg 18 072—Warren							
Mississippi State Charity Hospital ★+▲	Gen	120	110	State	Yes¹	M D	1842
Vicksburg Infirmary ▲	Gen	50	40	Indep	Yes¹	M D	1903
Vicksburg Sanitarium and Crawford Street Hosp ▲	Gen	100	60	Indep	Yes¹	M D	1901
Water Valley 4 064—Yalobusha							
Water Valley Hospital	Gen	12	1	Part	Yes	M D	1919
West Point 4 400—Clay							
Ivy Hospital	Gen	25	11	Indiv	Yes¹	R N	1918
Winona 2 220—Montgomery							
Winona Infirmary	Gen	40	15	Indep	Yes¹	M D	1908
Yazoo City, 5 244—Yazoo							
Yazoo Hospital	Gen	20	8	Indep	Yes¹	R N	1898

Total registered hospitals in Mississippi 70 capacity 7 062 average census 5 175 Hospitals not admitted to the register 1 capacity 50

MISSOURI City Pop—County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt M D R N Lay	Year Est
Anglum 714—St Louis							
Jewish Sanatorium of St *Louis*	*TB*	76	68	Indep	No	M D	1914
Bonne Terre 3 815—St Francois							
Bonne Terre Hospital	Indus	25	8	Indus	No	R N	1911
Boonville 4 665—Cooper							
St Joseph's Hospital	Gen	25	27	Church	Yes¹	Lay	1918
Butler 2 702—Bates							
Butler Community Hosp	Gen	10	4	Indiv	No	Lay	1926
California 2,218—Moniteau							
Latham Sanitarium	Gen	35	21	Indiv	No	M D	1923
Cape Girardeau 14 400—Cape Girardeau							
St Francis Hospital ▲	Gen	65	36	Church	No	Lay	1882
Southeast Missouri Hosp	Gen	50	New	Indep	Yes	R N	1928
Carrollton 3 218—Carroll							
Cook's Hospital	Gen	10	8	Indiv	No	R N	1912
Chillicothe 6 772—Livingston							
Chillicothe Hospital ³	Gen	50	6	Indiv	No	Lay	1888
Clinton 5 098—Henry							
Dr N I Stebbins Hospital	Gen	20	10	Indiv	No	Lay	1915
Columbia 10 700—Boone							
Boone County Hospital ▲	Gen	50	17	County	No	R N	1921
University Hospitals ▲	Gen	85	26	State	Yes¹	R N	1901
Crescent 104—St Louis							
George Warren Brown Convalescent Home	Conv	14	5	Church	No	Lay	1923
Crystal City 2 983—Jefferson							
Crystal City Hospital	Indus	6	3	Indus	No	M D	1925

MISSOURI—Cont City, Pop.—County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt M D R N Lay	Year Est
Diamond, 515—Newton							
Dr Riley F Cheatham's Hospital	Gen	5	2	Indiv	No	M D	1918
Excelsior Springs, 4 165—Clay							
Excelsior Springs Sanitarium & Hospital	Gen	55	40	Indep	No	M D	1909
United States Veterans Hospital No 99▲	Gen	125	87	VetBur	No	M D	1922
Farmington, 2 685—St Francois							
State Hospital No 4+	N&M	915	892	State	Yes	M D	1900
Fayette, 2 881—Howard							
Lee Hospital	Gen	10	6	Part	No	R N	1921
Fulton, 5 595—Callaway							
Callaway County Hospital	Gen	29	10	County	No	R N	1921
Hadley Hospital	TB	80	80	State	Yes	M D	1912
Missouri School for Deaf	Gen	32	8	State	No	Lay	1851
State Hospital No 1	N&M	1 450	1 435	State	No	M D	1847
Glendale (Kirkwood P O), 749—St Louis							
Oakland Park Hospital	N&M	20	12	Indep	No	M D	1915
Hannibal, 20 000—Marion							
Levering Hospital	Gen	50	26	City	Yes[1]	R N	1903
St Elizabeth's Hospital	Gen	30	14	Church	No	R N	1915
Harrisonville, 2 073—Cass							
Harrisonville Hospital	Gen	10	2	Indiv	No	Lay	1921
Higginsville, 2 724—Lafayette							
Confederate Home -	Gen	18	2	State	No	Lay	1891
Independence, 12 900—Jackson							
Independence Sanitarium▲	Gen	63	43	Church	Yes[1]	R N	1909
Vaile Sanitarium	Conv	27	14	Indep	No	M D	1911
Ironton, 832—Iron							
Arcadia Valley Hospital	Gen	25	12	Indep	No	M D	1925
Jefferson Barracks, 842—St Louis							
Station Hospital	Gen	100	38	Army	No	M D	1897
United States Veterans Hospital No 92▲	Gen	343	253	VetBur	No	M D	1923
Jefferson City, 16 100—Cole							
Missouri State Penitentiary Hospital[2]	Gen	75	45	State	No	M D	1875
St Mary's Hospital▲	Gen	50	35	Church	No	Lay	1905
Joplin, 29 902—Jasper							
Freeman Hospital	Gen	65	25	Church	Yes[1]	R N	1922
Joplin Children's Home -	Chil	24	6	City	No	Lay	1914
St John's Hospital▲	Gen	120	55	Church	Yes[1]	Lay	1900
Kansas City, 375 500—Jackson							
Baptist Hospital	Gen	35	12	Indep	No	Lay	1906
Children's Mercy Hospital▲	Chil	155	113	Indep	Yes[1]	R N	1897
Fairmount Maternity Hosp	Mater	50	35	Indiv	Yes	M D	1910
General Hospital (Colored Division)▲	Gen	135	125	City	Yes	M D	
Grace Hospital	Gen	75	46	Indep	No	M D	1914
Kansas City Boys Orphan Home	Chil	12	5	Church	No	Lay	1911
Kansas City General Hospital★▲	Gen	330	290	City	Yes[1]	M D	1890
Kansas City Industrial Hospital	Gen	12	4	Indep	No	M D	1912
Northeast Hospital	Indus	100	10	Indus	No	R N	1919
Research Hospital★▲	Gen	200	151	Indep	Yes[1]	R N	1886
St Joseph's Hospital★▲	Gen	250	125	Church	Yes[1]	Lay	1874
St Luke's Hospital★▲	Gen	165	122	Church	Yes[1]	Lay	1901
St Mary's Hospital★▲	Gen	183	164	Church	Yes[1]	R N	1909
St Vincent's Hospital	Mater	42	25	Church	Yes[1]	R N	1900
Simpson Major Sanitarium	N&M	35	22	Part	No	M D	1921
Trinity Lutheran Hosp★▲	Gen	125	84	Church	Yes[1]	Lay	1906
Trowbridge Training School for Nervous & Backward Children	N&M	25	23	Indiv	No	M D	1917
Union Station Hospital	Indus	6	3	Indus	No	M D	1914
United States Veterans Hospital No 67▲	Gen	200	160	VetBur	No	M D	1921
Vineyard Park Hospital	Gen	35	33	Indiv	No	M D	1921
Wesley Hospital	Gen	100	50	Indiv	No	M D	1910
Wheatley Provident Hosp▲	Gen	40	22	Indep	Yes[1]	M D	1910
Willows Maternity Sanitarium	Mater	75	64	Part	Yes	Lay	1905
G Wilse Robinson Sanitarium	N&M	50	40	Indiv	No	M D	1923
Kirksville, 7 213—Adair							
Ellis Hospital	Gen	35	20	Indiv	No	M D	1923
Grim Smith Hospital and Clinic	Gen	40	30	Indep	Yes[1]	M D	1909
Kirkwood, 4 422—St Louis							
Bethesda Dilworth Memorial Hospital	Gen	32	18	Church	No	R N	1925
Lamar, 2 255—Barton							
Mynatt-Popplewell Hosp	Gen	5	2	Part	No	M D	1924
Leeds, 1,000—Jackson							
Kansas City Tuberculosis Sanatorium	TB	90	87	City	No	M D	1915
Lexington, 4 695—Lafayette							
Highland Heights Hospital	Gen	10	5	Indiv	No	Lay	1920
Liberty, 3 097—Clay							
Missouri Odd Fellows Home Hospital	Gen	85	37	Frat	No	M D	1909
Marceline, 3 740—Linn							
B B Putman Memorial Hospital	Gen	15	12	Indiv	No	Lay	1922
Marshall, 1 371—Saline							
Missouri State School	N&M	945	737	State	No	M D	1899
Marthasville, 300—Warren							
Emmaus Home for Epileptics & Feebleminded	N&M	165	83	Church	No	Lay	1893
Maryville, 4 711—Nodaway							
St Francis Hospital▲	Gen	75	15	Church	Yes[1]	Lay	1894
Mexico, 6 013—Audrain							
Amanda Coll Hospital	Gen	25	15	Indiv	No	R N	1918
Audrain Hospital	Gen	39	25	County	No	R N	1913
Moberly, 14 100—Randolph							
McCormick Hospital	Gen	50	29	Indiv	No	M D	1920
Wabash Employees Hosp	Indus	60	35	Indus	No	M D	1882
Woodland Hospital	Gen	50	35	Indep	Yes[1]	M D	1909
Monett, 4 206—Barry							
Dr William M West's Hospital	Gen	18	6	Indiv	No	M D	1914
Mt Vernon, 1 254—Lawrence							
Missouri State Sanatorium for the Treatment of Incipient Tuberculosis	TB	330	310	State	No	M D	1907
Neosho, 3 968—Newton							
Sale Hospital	Gen	10	New	Indiv	No	M D	1927
Nevada, 7,159—Vernon							
Nevada Medical and Surgical Sanitarium	Gen	30	4	Part	No	R N	1888
State Hospital No 3	N&M	1 500	1 140	State	No	M D	1886
Normandy, 219—St Louis							
German St Vincent Orphan Association -	Chil	30	3	Church	No	Lay	
Overland, 800—St Louis							
Overland Hospital	Gen	10	5	Indiv	No	M D	1924
Parkville, 619—Platte							
Waverly Hospital	Gen	23	2	Indep	No	Lay	
Poplar Bluff, 8 042—Butler							
Brandon Hospital	Gen	45	15	Indiv	No	M D	1923
Lucy Lee Hospital	Gen	30	20	Part	No	M D	1925
Richland, 95—Pulaski							
Richland Hospital	Gen	5	1	Indiv	No	M D	1906
Rogersville, 408—Webster							
Rogersville Hospital	Gen	7	2	Indiv	No	M D	1915
Rolla, 2 077—Phelps							
United States Trachoma Hospital	Trach	24	18	USPHS	No	M D	1923
St Charles, 8 503—St Charles							
Evangelical Emmaus Home for Epileptics and Feebleminded	N&M	115	112	Church	No	Lay	1901
St Charles County Asylum	Gen	6	3	County	No	Lay	1880
St Joseph's Hospital	Gen	45	26	Church	No	Lay	1891
St James, 1,117—Phelps							
Federal Soldiers Home of Missouri -	Gen	90	77	State	No	Lay	1897
St Joseph, 78 400—Buchanan							
Dr Byrd's Sanitarium[3]	N&M	30	15	Indiv	No	M D	1914
Missouri Methodist Hosp★▲	Gen	200	103	Church	Yes[1]	Lay	1898
Noyes Hospital▲	Gen	80	50	Indiv	Yes[1]	Lay	1916
St Joseph's Hospital▲	Gen	150	65	Church	Yes[1]	R N	1854
St Joseph's Hospital for Contagious & Communicable Diseases[3]	Iso	14	2	City	No	M D	1921
State Hospital No 2	N&M	2 000	1 923	State	No	M D	1874
Thompson Sanitarium	N&M	18	10	Indiv	No	M D	1909
Dr C R Woodson's Sanitarium	N&M	70	28	Indep	No	M D	1907
St Louis, 830 400—St Louis City							
Alexian Brothers Hospital of St Louis★▲	Gen	250	160	Church	No	Lay	1870
Barnard Free Skin and Cancer Hospital▲	Sk&Ca	40	32	Indep	No	R N	1905
Barnes Hospital★+▲	Gen	282	237	Church	Yes[1]	M D	1914
Bethesda Hospital▲	Gen	103	75	Church	Yes[1]	R N	1889
Christian Hospital★	Gen	110	80	Indep	Yes[1]	R N	1900
City Infirmary	Gen	81	60	City	No	Lay	1854
City Isolation Hospital+	Iso	200	88	City	Yes	M D	1916
City Sanitarium+	N&M	3 000	2 977	City	No	M D	1869
Evangelical Deaconess Home and Hospital★▲	Gen	120	98	Church	Yes[1]	Lay	1889
Frisco Employees Hosp▲	Indus	100	44	Indus	No	M D	1905
Home for the Aged of the Little Sisters of the Poor[3]	Gen	50	15	Church	No	Lay	1900
Hospital of Masonic Home of Missouri	Gen	133	85	Frat	No	M D	1886
Jewish Hospital of St Louis★+▲	Gen	272	117	Indep	Yes[1]	Lay	1900
Josephine Hospital	Gen	45	37	Indep	Yes[1]	R N	1896
Lutheran Hospital▲	Gen	160	80	Church	Yes[1]	R N	1858
Missouri Baptist Sanitarium★+▲	Gen	302	275	Church	Yes[1]	M D	1890
Missouri Pacific Hosp▲	Indus	300	123	Indus	No	Lay	1876
Mt St Rose Sanatorium	TB	150	135	Church	No	Lay	1920
Peoples Hospital	Gen	56	30	Indep	Yes[1]	M D	1918
Robert Koch Hospital	TB Iso	470	399	City	No	M D	1910
St Ann's Maternity Hosp	Mater	50	30	Church	Yes[1]	Lay	1855
St Anthony's Hospital▲	Gen	100	75	Church	Yes[1]	R N	1877
St John's Hospital★▲	Gen	263	150	Church	Yes[1]	Lay	1871
St Louis Baptist Hospital	Gen	70	60	Church	Yes[1]	M D	1890
St Louis Children's Hospital+▲	Chil	203	148	Indep	Yes[1]	R N	1879
St Louis City Hospital★+▲	Gen	700	690	City	Yes[1]	M D	1853
St Louis City Hospital No 2★+▲	Gen	270	221	City	Yes[1]	M D	1910
St Louis Maternity Hospital▲	Mater	104	50	Indep	Yes[1]	R N	1908
St Louis Mullanphy Hosp▲	Gen	110	85	Church	Yes[1]	R N	1828
St Louis Training School	N&M	500	351	City	No	M D	1924
St Luke's Hospital★+▲	Gen	186	167	Church	Yes[1]	Lay	1865
St Mary's Hospital★▲	Gen	220	164	Church	Yes[1]	Lay	1924
St Mary's Infirmary★▲	Gen	123	105	Church	No	R N	1877
St Vincent's Sanitarium	N&M	360	356	Church	No	Lay	1858
Salvation Army Home and Hospital	Mater	8	6	Church	No	Lay	1898
Shriner's Hospital for Crippled Children+▲	Ortho	106	104	Frat	No	Lay	1924
United States Marine Hospital No 18▲	Gen	70	60	USPHS	No	M D	1810
Westminster Hospital	Gen	100	22	Indiv	No	M D	1911
Sedalia, 23 000—Pettis							
St Mary's Hospital	Gen	20	10	Church	No	R N	1915
Sedalia General Hospital	Gen	14	10	City	No	Lay	1893

MISSOURI—Cont

City Pop—County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt MD RN Lay	Year Est
Springfield 50 600—Greene							
Burge Hospital	Gen	35	27	Church	Yes[1]	Lay	1900
Frisco Employees Hospital	Indus	30	15	Indus	No	M D	1899
St John's Hospital	Gen	125	80	Church	Yes[1]	Lay	1891
Springfield (Baptist) Hospital	Gen	85	50	Indep	Yes[1]	R N	1904
Stella, 319—Newton							
C Cardwell Hospital	Gen	6	2	Indiv	No	M D	1923
Trenton 6 951—Grundy							
Cullers Hospital	Gen	20	New	Indiv	No	R N	1927
Wright Hospital	Gen	15	8	Indiv	No	M D	1910
Valley Park 899—St Louis							
Ridge Farm	Chil	60	57	Indep	No	Lay	
Warrensburg 4 811—Johnson							
Oak Hill Sanitarium[3]	Gen	5	3	Indiv	No	Lay	1911
Warrensburg Clinic	Gen	10	3	Part	No	M D	1919
Washington 3 132—Franklin							
St Francis Hospital	Gen	35	2	Church	No	R N	1920
Webb City 7 807—Jasper							
Jasper County Tuberculosis Hospital	TB	100	70	County	No	M D	1910
Webster Groves, 9 474—St Louis							
Glenwood Sanatorium	Conv	35	29	Indep	No	Lay	1911
Miriam Convalescent Home	Conv	21	17	Frat	No	M D	1911
Westplains 3 178—Howell							
Christa Hogan Hospital	Gen	18	8	Indiv	No	M D	1920

Total registered hospitals in Missouri, 159 Capacity 23 865 average census 18,935 Hospitals not admitted to the register, 20 capacity 1 256

MONTANA

City Pop—County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt MD RN Lay	Year Est
Anaconda 12 537—Deerlodge							
St Ann's Hospital ▲	Gen	60	45	Church	Yes[1]	Lay	1889
Bearcreek 744—Carbon							
Bearcreek Hospital[3]	Gen	5	1	Indiv	No	M D	1911
Bigtimber, 1 282—Sweet Grass							
Bigtimber Hospital	Gen	6	2	Indiv	No	M D	1913
Billings 17 971—Yellowstone							
Billings Deaconess Hospital	Gen	44	27	Church	Yes	R N	1927
St Vincent's Hospital ▲	Gen	160	75	Church	Yes[1]	Lay	1898
Bozeman 6 183—Gallatin							
Bozeman Deaconess Hosp	Gen	60	24	Church	Yes[1]	R N	1911
Browning 986—Glacier							
Blackfeet Hospital	Gen	30	15	Indian	No	M D	1914
Butte 42 867—Silver Bow							
Butte Deaconess Hospital	Gen	23	21	Church	Yes[1]	R N	1917
Murray Hospital ★▲	Gen	118	74	Indep	Yes[1]	Lay	1890
St James Hospital ★▲	Gen	165	80	Church	Yes[1]	R N	1881
Silver Bow County Hosp	Gen	140	120	County	No	Lay	1885
Choteau, 1 043—Teton							
Choteau Hospital	Gen	12	8	Indiv	No	M D	1914
Columbia Falls 611—Flathead							
Montana Soldiers Home	Gen	41	85	State	No	Lay	1897
Columbus 987—Stillwater							
Stillwater Hospital Comp	Gen	14	6	Indep	No	R N	1914
Conrad 988—Pondera							
Conrad Hospital[3]	Gen	30	12	Indep	No	R N	1916
DuBois Hospital[3]	Gen	9	4	Indiv	No	Lay	1918
Crow Agency 113—Big Horn							
Crow Agency Hospital	Gen	30	10	Indian	No	Lay	1903
Deer Lodge 3 780—Powell							
Montana State Penitentiary Hospital[2]	Gen	20	3	State	No	M D	,
Montana State Tuberculosis Sanitarium	TB	150	147	State	No	M D	1912
St Joseph's Hospital	Gen	50	15	Church	No	R N	1880
Dillon 2,701—Beaverhead							
Barrett Hospital	Gen	20	5	Indep	No	R N	1923
Forsyth 1,838—Rosebud							
Forsyth Deaconess Hospital	Gen	24	11	Church	No	Lay	1921
Ft Benton 1 004—Choteau							
St Clare's Hospital	Gen	40	16	Church	No	R N	1886
Ft Harrison — Lewis & Clark							
United States Veterans Hospital No 72▲	Gen, TB	375	216	VetBur	No	M D	1921
Ft Missoula, — Missoula							
Station Hospital	Gen	25	8	Army	No	M D	1877
Glasgow 2 059—Valley							
Frances Mahon Deaconess Hospital	Gen	24	15	Church	Yes[1]	R N	1911
Valley County Hospital	Gen	10	8	County	No	R N	
Glendive 3 816—Dawson							
Glendive General Hospital	Gen	25	10	County	No	M D	1912
Northern Pacific Hospital ▲	Indus	52	38	Indus	No	M D	1912
Great Falls 29 883—Cascade							
Columbus Hospital ▲	Gen	128	91	Church	Yes[1]	Lay	1892
Great Falls Detention Hosp	Iso	23	6	Cy&Co	No	M D	1917
Montana Deaconess Hosp ▲	Gen	125	109	Church	Yes[1]	R N	1902
Hamilton 1 700—Ravalli							
Hamilton Hospital	Gen	20	12	Indep	No	R N	1912
Hardin 1 312—Big Horn							
Labbitt Hospital	Gen	15	5	Indiv	No	M D	1921
Harlem 721—Blaine							
Ft Belknap Indian Hosp	Gen	15	5	Indian	No	M D	192
Havre 5 429—Hill							
Kennedy Deaconess Hosp	Gen	35	20	Church	Yes	R N	1926
Sacred Heart Hospital	Gen	52	35	Church	Yes[1]	Lay	1911
Helena 12,037—Lewis & Clark							
Florence Crittenton Home	Mater	8	6	Indep	No	Lay	1900
Lewis and Clark County Hospital	Gen	35	12	County	No	Lay	1898
St John's Hospital	Gen	65	30	Church	Yes[1]	R N	1872
St Peter's Hospital	Gen	50	35	Church	Yes[1]	R N	1880
Kalispell 5 147—Flathead							
Kalispell General Hospital	Gen	50	33	Church	Yes[1]	R N	1910
Lame Deer 1 525—Rosebud							
Tongue River Agency Hosp	Gen	18	8	Indian	No	M D	1926

MONTANA—Cont

City Pop—County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt MD RN Lay	Year Est
Lewistown 6 120—Fergus							
Fergus County Hospital[2]	Gen	16	4	County	No	R N	1893
St Joseph's Hospital ▲	Gen	50	27	Church	Yes[1]	R N	1908
Libby, 1 572—Lincoln							
Libby Hospital	Gen	13	7	Part	No	R N	1925
Livingston, 6 326—Park							
Park Hospital	Gen	22	10	Indiv	No	M D	1913
Miles City 7 937—Custer							
Holy Rosary Hospital ▲	Gen	100	45	Church	Yes[1]	Lay	1910
Montana State Industrial School[2]	Gen	8	3	State	No	Lay	1893
Missoula 12 668—Missoula							
Northern Pacific Hospital ▲	Indus	75	39	Indus	No	M D	1881
St Luke's Hospital	Gen	16	7	Indep	No	M D	1910
St Patrick's Hospital ▲	Gen	140	60	Church	Yes[1]	R N	1873
Thornton Hospital	Gen	40	23	Part	No	M D	1918
Neihart 749—Cascade							
Neihart Hospital	Indus	10	4	Indus	No	Lay	1924
Outlook 295—Sheridan							
Outlook Community Hosp[3]	Gen	14	8	Indep	No	M D	1922
Philipsburg 1 724—Granite							
Granite County Hospital	Gen	15	3	County	No	M D	1893
Polson 300—Lake							
Hotel Dieu Hospital	Gen	12	3	Church	No	Lay	1916
Poplar 1 152—Roosevelt							
Fort Peck Indian School Hospital	Gen	28	14	Indian	No	Lay	1914
Red Lodge 4,515—Carbon							
Mt Maurice Hospital and Sanitarium	Indus	20	10	Indus	Yes	M D	1903
Roundup 2 409—Musselshell							
Musselshell Valley Hospital	Gen	20	6	Indiv	No	R N	1922
St Ignatius 80—Lake							
Holy Family Hospital	Gen	30	18	Church	No	R N	1914
Sidney, 1 400—Richland							
Sidney Deaconess Hospital	Gen	24	15	Church	No	R N	1910
Stevensville 744—Ravalli							
Stevensville Hospital	Gen	7	3	Indiv	No	M D	1917
Terry 794—Prairie							
Terry Hospital	Gen	9	4	Indiv	No	R N	1914
Three Forks 1 071—Gallatin							
Three Forks Hospital	Gen	30	8	Indep	No	R N	1915
Twin Bridges, 765—Madison							
State Orphan Home[2]	Chil	30	2	State	No	Lay	1894
Warmsprings 110—Deerlodge							
Montana State Hospital +	N&M	1 550	1 421	State	No	M D	1877

Total registered hospitals in Montana, 66 capacity 4 629 average census 3 197 Hospitals not admitted to the register 3 capacity 19

NEBRASKA

City, Pop—County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt MD RN Lay	Year Est
Ainsworth 1 508—Brown							
Brown County Hospital	Gen	29	15	Indiv	No	M D	1922
Albion 1 978—Boone							
Physicians Hospital	Gen	10	5	Indiv	No	M D	1920
Alliance 4 951—Box Butte							
St Joseph's Hospital ▲	Gen	58	40	Church	Yes[1]	Lay	1910
Alma, 1 058—Harlan							
Alma Hospital	Gen	12	3	Indiv	No	Lay	1919
Arnold 933—Custer							
Arnold Hospital	Gen	12	4	Indiv	No	R N	1917
Atkinson 1 300—Holt							
Atkinson General Hospital	Gen	10	8	City	No	R N	1925
Atkinson Sanitarium	Gen	6	2	Indiv	No	M D	1905
Auburn 2 865—Nemaha							
Auburn Hospital	Gen	10	4	Indiv	No	Lay	1910
Aurora 2 932—Hamilton							
Aurora Hospital	Gen	16	6	Part	No	R N	1916
Axtell 394—Kearney							
Bethphage Inner Mission Association	N&M	124	112	Indep	No	R N	1913
Beatrice 9 664—Gage							
Beatrice Sanitarium	Gen	25	15	Indiv	Yes[1]	M D	1901
Nebraska Institution for Feebleminded	FeMi	860	850	State	No	M D	1884
Beemer 548—Cuming							
Pierson Hospital	Gen	6	1	Indiv	No	M D	1907
Blair 2 702—Washington							
Blair Hospital	Gen	15	4	Indiv	No	R N	1906
Broken Bow 2 567—Custer							
Broken Bow Hospital	Gen	35	10	Indiv	No	M D	1923
Burkett 20—Hall							
Nebraska Soldiers and Sailors Home[3]	Gen	105	80	State	No	Lay	1888
Cambridge 1 042—Furnas							
Republican Valley Hospital	Gen	25	10	Part	No	R N	1906
Central City 2 410—Merrick							
J E Benton Hospital	Gen	10	4	Indiv	No	M D	1920
College View 2 240—Lancaster							
College View Sanitarium and Hospital	Gen	40	10	Indiv	Yes	M D	1922
Columbus 5 410—Platte							
St Mary's Hospital ▲	Gen	208	150	Church	No	Lay	1879
Crawford 1 646—Dawes							
R. L Ivins Hospital	Gen	10	4	Indiv	No	M D	1918
David City 2 216—Butler							
David City Hospital	Gen	25	10	Indep	No	M D	1901
Fairbury 5 454—Jefferson							
Taylor Hospital	Gen	20	7	Indiv	No	M D	1914
Falls City 4 950—Richardson							
Falls City Hospital ▲	Gen	35	9	Indiv	No	R N	1909
Farnam 408—Dawson							
Reeves Memorial Hospital	Gen	12	3	Indiv	No	M D	1925
Ft Crook 325—Sarpy							
Station Hospital	Gen	30	10	Army	No	M D	1896
Ft Omaha — Douglas							
Station Hospital	Gen	50	10	Army	No	M D	1868

NEBRASKA—Cont City Pop —County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt M D R.N Lay	Year Est
Ft Robinson 613—Dawes							
Station Hospital	Gen	11	2	Army	No	M D	1874
Fremont 9 570—Dodge							
Military Avenue Hospital	Gen	20	12	Indiv	No	R.N	1924
Richmond Hospital	Gen	12	6	Indiv	No	R N	1923
Genoa 1 069—Nance							
Genoa Indian School Hosp	Gen	30	5	Indian	No	Lay	1886
Grand Island 15 602—Hall							
Grand Island General Hosp	Gen	25	16	Indep	No	M D	1913
St Francis Hospital ★▲	Gen	180	145	Church	Yes[1]	Lay	1886
Hartington 1 467—Cedar							
St John's Hospital	Gen	16	9	Indiv	No	M D	
Hastings 12 954—Adams							
Mary Lanning Mem Hosp	Gen	75	47	Indep	Yes[1]	R N	1915
Hebron 1,513—Thayer							
Blue Valley Hospital [3]	Gen	25	20	Part	No	R N	1905
Imperial 723—Chase							
Home Hospital	Gen	8	5	Indiv	No	R N	1925
Ingleside 30—Adams							
Hastings State Hospital	N&M	1,385	1 343	State	No	M D	1888
Kearney 7 702—Buffalo							
Good Samaritan Hospital	Gen	45	30	Church	No	Lay	1924
Hosp for the Tuberculous	TB	130	94	State	No	M D	1912
State Industrial School for Boys [2]	Gen	10	2	State	No	Lay	1880
Kimball 1 620—Kimball							
Kimball Hospital	Gen	14	9	Indiv	No	R N	1919
Lincoln 60 941—Lancaster							
Bryan Memorial Hosp of the Methodist Episcopal Church	Gen	50	33	Church	Yes[1]	M D	1926
Esther's Hospital [3]	Gen	25	10	Indiv	No	M D	1908
Green Gables Dr Benj F Bailey Sanatorium	Gen	115	92	Indep	Yes[1]	M D	1901
Isolation Hospital	Iso	22	6	City	No	Lay	1900
Lincoln General Hospital ★▲	Gen	130	78	City	Yes[1]	R N	1924
Lincoln Hospital	Gen	30	11	Indep	Yes[1]	R N	1901
Lincoln Sanitarium	Gen	100	70	Part	Yes[1]	M D	1893
Lincoln State Hospital	N&M	1 157	1 088	State	No	M D	1870
Nebraska Orthopedic Hosp ▲	Ortho	115	113	State	Yes[1]	M D	1905
Nebraska State Penitentiary Hospital	Gen	30	5	State	No	M D	1914
Roeder Maternity Home and Hospital	Mater	14	2	Indiv	No	Lay	1914
St Elizabeth's Hospital ★▲	Gen	175	95	Church	Yes[1]	Lay	1889
Dr Shoemaker's Private Hospital	Gen	15	5	Indiv	No	M D	1893
Lynch 589—Boyd							
Lynch General Hospital	Gen	20	12	Indiv	No	M D	1922
McCook 4 303—Redwillow							
St Catherine of Sienna Hospital	Gen	40	10	Church	Yes[1]	Lay	1921
Milford 792—Seward							
Milford Hospital	Gen	5	2	Indiv	No	Lay	1914
Nebraska Industrial Home	Gen	5	2	State	No	Lay	1890
Nebraska Soldiers and Sailors Home Hospital	Gen	60	40	State	No	Lay	1896
Nebraska City 6 279—Otoe							
Nebraska City Sanitarium and Hospital	Gen	10	2	Indiv	No	M D	1923
St Mary's Hospital	Gen	45	16	Church	No	Lay	1927
Newman Grove 1 200—Madison							
Community Hospital	Gen	10	3	Part	No	M D	1920
Norfolk 8 634—Madison							
Norfolk General Hospital	Gen	25	15	Indiv	No	R.N	1915
Norfolk State Hospital +	N&M	900	877	State	No	M D	1887
Verges Sanitarium	Gen	16	7	Indiv	No	M D	
North Platte 13 679—Lincoln							
Platte Valley Hospital	Gen	17	12	Indiv	No	R.N	1913
Redfield Dent Hospital	Gen	12	5	Indiv	No	M D	1925
Wurtele Hospital	Gen	15	8	Indiv	No	M D	1922
Oakland, 1 356—Burt							
Oakland Community Hosp	Gen	12	7	Indiv	No	Lay	
Omaha 215 400—Douglas							
Bishop Clarkson Memorial Hospital ▲	Gen	92	60	Church	Yes[1]	R N	1883
City Detention Hospital [3]	Iso	22	8	City	No	M D	1901
City Emergency Hospital	Iso	40	7	City	No	R.N	1912
Creighton Memorial St Joseph's Hospital ★▲	Gen	420	210	Church	Yes[1]	Lay	1870
Douglas County Hospital	Gen	175	135	County	No	Lay	1885
Evangelical Covenant Hospital of Omaha	Gen	85	51	Church	Yes[1]	R N	1905
Frederick Hospital	Gen	8	1	Indiv	No	M D	1917
Immanuel Deaconess Institute ★▲	Gen	250	76	Church	Yes[1]	Lay	1890
Lord Lister Hospital	Gen	120	81	Indiv	Yes[1]	Lay	1914
Nebraska Methodist Episcopal Hospital & Deaconess Home ★▲	Gen	200	151	Church	Yes[1]	R N	1891
Nebraska School for Deaf	Gen	16	4	State	No	Lay	1869
Nicholas Senn Hospital	Gen	80	62	Indep	Yes[1]	Lay	1912
Omaha Maternity Hospital	Mater	22	14	Indiv	No	R N	1915
Radium Hospital	Sk&Ca	30	15	Indiv	No	M D	1920
Riverview Detention Home [2]	Chil	7	2	County	No	Lay	1905
St Catherine's Hospital	Gen	150	105	Church	Yes[1]	Lay	1910
Salvation Army Women's Home and Hospital	Mater	8	3	Church	No	Lay	1893
South Side Hospital	Gen	25	10	Indep	No	R N	1894
Univ of Nebraska Hosp ★▲	Gen	120	116	State	Yes[1]	M D	1917
Wise Memorial Hospital ▲	Gen	75	60	Indep	Yes[1]	R N	1901
Women's Detention Hosp [3]	Vener	20	12	City	No	R N	1918
Orchard 444—Antelope							
Orchard Hospital	Gen	6	1	Indiv	No	R.N	1918
Ord 2 143—Valley							
Ord Hospital	Gen	20	12	Indiv	No	M D	1917
Palmer 577—Merrick							
Coolidge Hosp and Sanit	Gen	5	1	Indep	No	M D	1916
Pawnee City 1 595—Pawnee							
Pawnee City Hospital	Gen	29	20	Indiv	No	M D	1916
Pender 992—Thurston							
Logan Valley Hospital [3]	Gen	8	2	Indiv	No	M D	1912
Plainview 1 199—Pierce							
Plainview General Hospital	Gen	8	4	Indep	No	R.N	
Plattsmouth 4 190—Cass							
Nebraska Masonic Home	Gen	40	20	Frat	No	Lay	1903
Schuyler 2 636—Colfax							
Kolouch Hospital	Gen	13	8	Indiv	No	M D	1922
Scottsbluff 6 912—Scotts Bluff							
West Nebraska Methodist Episcopal Hospital ▲	Gen	51	27	Church	Yes[1]	R.N	1924
Seward 2,368—Seward							
Morrow Hospital	Gen	25	5	Indiv	No	R.N	1902
Sidney 2 852—Cheyenne							
Taylor Hospital	Gen	25	New	Indiv	No	M D	1927
Spencer, 728—Boyd							
Spencer Hospital	Gen	14	4	Part	No	R.N	1905
Stratton 509—Hitchcock							
Dr Stewart's Private Hosp	Gen	14	6	Indiv	No	M D	1902
Stromsburg 1 361—Polk							
Home Hospital	Gen	8	4	Indiv	No	M D	1926
Stuart 739—Holt							
Wilson Hospital	Gen	15	4	Part	No	R.N	1920
Superior 2 719—Nuckolls							
Superior Memorial Hospital	Gen	15	6	Indep	No	R.N	1915
Table Rock 750—Pawnee							
McCrea Private Hospital	Gen	10	1	Indiv	No	M D	1906
Tilden 1 101—Madison							
Tilden Hospital	Gen	10	5	Indiv	No	Lay	1920
Walthill 1 145—Thurston							
Dr Picotte Memorial Hosp	Gen	15	5	Part	No	R N	
West Point 2 002—Cuming							
St. Joseph Home for Aged and Hospital [2]	Gen	15	6	Church	No	Lay	1905
Winnebago 648—Thurston							
Winnebago Indian Hospital	Gen	60	35	Indian	No	Lay	1916
York 5 388—York							
Evangelical Lutheran Hosp	Gen	60	30	Church	Yes[1]	R.N	1914
York Clinic and Clinic Hosp	Gen	15	3	Part	No	R N	1920

Total registered hospitals in Nebraska 115 capacity, 9 359 average census 7 104 Hospitals not admitted to the register 9 capacity 177

NEVADA City Pop —County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt M D R N Lay	Year Est
Austin 1 000—Lander							
Lander County Hospital	Gen	10	4	County	No	M.D	1880
Battle Mountain 1 120—Lander							
Battle Mountain Gen Hosp	Gen	5	2	County	No	M D	1917
Carson City 1 685—Ormsby							
Nevada State Orphans's Home [2]	Chil	8	2	State	No	Lay	1870
East Ely 1 507—White Pine							
Steptoe Valley Hospital ▲	Indus	40	28	Indus	No	M D	1909
Elko 2 173—Elko							
Elko General Hospital ▲	Gen	48	20	County	No	R N	1921
Ely 2 090—White Pine							
White Pine County and General Hospital	Gen	21	16	County	No	R.N	1900
Goldfield 1 558—Esmeralda							
Association Hospital	Indus	20	14	Indus	No	M D	1918
Hawthorne 328—Mineral							
Mineral County Hospital	Gen	14	6	County	No	M D	1883
Las Vegas 2 304—Clark							
Hewetson Hospital	Gen	16	7	Indiv	No	M D	1906
Las Vegas Hospital	Gen	15	8	Indiv	No	M D	1908
Nixon 12—Washoe							
Pyramid Lake Indian Sanit	TB	58	34	Indian	No	M D	1876
Owyhee 15—Elko							
Western Shoshone Hospital and Dispensary	Gen	20	6	Indian	No	Lay	1915
Reno 12 665—Washoe							
Nevada State Hospital for Mental Diseases	N&M	300	225	State	No	M D	1882
Reno Hospital	Gen	15	6	Indep	No	R.N	1916
St Mary's Hospital ▲	Gen	50	28	Church	No	R N	1907
Washoe County Hospital	Gen	100	75	County	No	M D	
Stewart 412—Ormsby							
Carson Indian Sanatorium	Gen	20	17	Indian	No	Lay	1916
Carson Indian School Hosp	Gen	20	14	Indian	No	Lay	1891
Tonopah 4 144—Nye							
Nye County Hospital	Gen	36	25	County	No	M D	1902
Tonopah Mines Hospital	Indus	20	12	Indus	No	M D	1914
Virginia City 1 200—Storey							
Storey County Hospital	Gen	48	22	County	No	M D	
Winnemucca 2,011—Humboldt							
Humboldt County Hospital	Gen	30	16	County	No	R.N	1908

Total registered hospitals in Nevada 22 capacity 914 average census 588 Hospitals not admitted to the register — capacity —

NEW HAMPSHIRE City Pop —County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt M D R.N Lay	Year Est.
Ashuelot 475—Cheshire							
Fairlawn Rest Home	Conv	10	3	Indiv	No	M D	1926
Berlin 18 552—Coos							
St Louis Hospital	Gen	50	45	Church	Yes	R.N	1905
Brentwood 759—Rockingham							
Rockingham County Hosp	Gen	35	26	County	No	Lay	1912
Concord 22 546—Merrimack							
Armour Memorial Infirm	Gen	65	13	Indep	No	M D	1860
Margaret Pillsbury General Hospital	Gen	70	40	Indep	Yes[1]	R N	1885

NEW HAMPSHIRE—Cont

City, Pop —County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt M D R N Lay	Year Est
New Hampshire Mem Hosp for Women and Children	Gen	75	40	Indep	Yes[1]	R N	1895
New Hampshire State Hosp	N&M	1 566	1 566	State	Yes[1]	M D	1842
Dover 13 029—Strafford							
Hayes Hospital	Gen	25	12	Indep	No	Lay	1899
Wentworth Hospital ▲	Gen	69	30	City	Yes[1]	R N	1906
Exeter, 4 604—Rockingham							
Exeter Hospital	Gen	40	20	Indep	Yes[1]	R N	1895
Lamont Infirmary [2]	Gen	40	3	Indep	No	M D	1922
Franklin 6 318—Merrimack							
Franklin Hospital	Gen	36	16	Indep	Yes[1]	R N	1910
Glencliff 55—Grafton							
New Hampshire State Sanatorium for the Treatment of Tuberculosis +	TB	110	95	State	No	M D	1909
Grasmere 200—Hillsborough							
Hillsborough County Hosp ▲	Gen	80	80	County	Yes[1]	Lay	1907
Hanover 1 551—Grafton							
Mary Hitchcock Memorial Hospital ★▲	Gen	125	90	Indep	Yes[1]	Lay	1890
Keene 11 855—Cheshire							
Elliot Community Hosp ▲	Gen	70	51	Indep	Yes[1]	R N	1892
Laconia 11 800—Belknap							
Laconia Hospital ▲	Gen	52	31	Indep	Yes[1]	R N	1898
Laconia State School	N&M	430	427	State	No	M D	1901
Lancaster 2,819—Coos							
Lancaster Hospital	Gen	15	10	City	No	Lay	1919
Lincoln 1 473—Grafton							
Lincoln Hospital	Indus	10	3	Indus	No	M D	1900
Littleton 2,308—Grafton							
Littleton Hospital	Gen	25	10	Indep	Yes[1]	R N	1906
Manchester 84 000—Hillsborough							
Balch Hospital ▲	Gen	17	10	City	Yes	R N	1921
Cameron Maternity Hosp	Mater	6	3	Indiv	No	R N	1913
Derryfield Hospital	Gen	6	3	Indiv	No	Lay	1918
Elliot Hospital ▲	Gen	75	44	Indep	Yes[1]	R N	1888
Hospital Notre Dame De Lourdes ▲	Gen	71	42	Church	Yes[1]	Lay	1892
Lucy Hastings Hospital	Gen	25	20	Indep	Yes[1]	Lay	1925
Manchester Isolation Hosp	Iso	55	12	City	No	M D	1892
Our Lady of Perpetual Help Hospital	Mater	24	8	Church	Yes	R N	1902
Sacred Heart Hospital ▲	Gen	85	53	Church	Yes[1]	Lay	1885
State Industrial School [2]	Gen	18	7	State	No	Lay	1858
Nashua 29 723—Hillsborough							
Nashua Memorial Hosp ▲	Gen	70	52	Indep	Yes[1]	R N	1892
St Joseph s Hospital ▲	Gen	100	80	Church	Yes[1]	R N	1905
New London 701—Merrimack							
New London Hospital	Gen	12	5	Indep	No	R N	1919
Newport, 4,109—Sullivan							
Carrie F Wright Memorial Hospital	Gen	22	11	Indep	Yes[1]	R N	1910
North Conway 1911—Carroll							
Memorial Hospital	Gen	20	11	Indep	No	Lay	1911
North Haverhill 814—Grafton							
Grafton County Farm Hospital	Gen	25	8	County	No	Lay	1907
Pembroke 2,563—Merrimack							
Pembroke Sanatorium	TB	75	75	Indep	Yes	R N	1900
Peterboro 2,615—Hillsborough							
Peterboro Hospital	Gen	19	11	Indep	No	R N	1919
Plymouth 2,353—Grafton							
Emily Balch and Soldiers & Sailors Memorial Hospital	Gen	25	14	City	No	Lay	1920
Portsmouth 14 871—Rockingham							
Mark H Wentworth Home for Chronic Invalids	Gen	18	12	Indep	No	M D	1912
Portsmouth Hospital ▲	Gen	64	35	Indep	Yes[1]	R N	1887
United States Naval Hosp	Gen	240	46	Navy	No	M D	1913
Rochester 9 962—Strafford							
Rochester Hospital	Gen	25	22	Indep	No	R N	1919
Tilton 2 014—Belknap							
New Hampshire Soldiers Home	Gen	15	6	State	No	Lay	1890
Whitefield 1 935—Coos							
Morrison Hospital	Gen	35	24	City	Yes[1]	M D	1902
Wolfeboro, 2,178—Carroll							
Huggins Hospital	Gen	25	12	Indep	No	Lay	1903
Woodsville 1 275—Grafton							
Grafton County Hospital [2]	Gen	20	10	County	No	Lay	1850
Woodsville Hospital	Gen	25	14	Indep	Yes[1]	R N	1903

Total registered *hospitals in New Hampshire 49 capacity 4 227* average census, 3,270 Hospitals *not* admitted to the register 0 capacity, 0

NEW JERSEY

City Pop —County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt M D R N Lay	Year Est
Allenwood 166—Monmouth							
Allenwood Sanatorium and Monmouth County Hosp	TB	70	68	County	No	R N	1921
Arlington, 12 020—Hudson							
New Jersey Home for Disabled Soldiers [2]	Gen	65	42	State	No	Lay	1863
West Hudson Hospital	Gen	51	22	Indep	No	R N	1913
Atlantic City 53 287—Atlantic							
Atlantic City Hospital ★▲	Gen	280	157	City	Yes[1]	R N	1897
Children s Seashore House +	Chil	375	188	Indep	Yes	M D	1872
Galon Hall	Conv	183	150	Indep	No	Lay	1890
Dr Leonard s Private Sanit	Al&Dr	25	14	Indiv	No	M D	1911
Municipal Hospital	Iso	50	10	City	No	Lay	1909
Seaside House for Invalid Women	Conv	130	91	Indep	No	Lay	1878
Bayonne 88 767—Hudson							
Bayonne Hospital and Dispensary ★▲	Gen	103	78	Indep	Yes[1]	R N	1889
Swiney Sanitarium	Gen	28	16	Indiv	Yes	M D	1912
Bellemead 50—Somerset							
Bellemead Farm Colony and Sanatorium	N&M	120	50	Indep	No	M D	1910
Belleville, — Essex							
Essex County Hospital for Contagious Diseases +	Iso	260	100	County	No	M D	1908
Bernardsville 1 050—Somerset							
Visiting Nurse Association of Somerset Hills	Gen	6	3	Indep	No	R N	1906
Boonton 5 372—Morris							
New Jersey Firemen s Home [2]	Gen	10	5	State	No	Lay	1900
Boundbrook 6 906—Somerset							
Boundbrook Hospital	Gen	23	New	Indep	No	M D	1927
Bridgeton 14 378—Cumberland							
Bridgeton Hospital	Gen	86	40	Indep	Yes[1]	R N	1899
Cumberland County Hospital for Insane	N&M	228	175	County	No	Lay	1910
Ivy Hall Sanitarium	N&M	28	25	Indiv	No	M D	1917
Lakeview Hospital	Mater	14	5	Indiv	No	M D	1919
Browns Mills 318—Burlington							
Deborah Tuberculosis Sanatorium	TB	48	42	Indep	No	M D	1912
Burlington 9 305—Burlington							
Masonic Home of New Jersey [2]	Gen	29	25	Frat	No	Lay	1898
Camden 128 642—Camden							
Bellevue Private Hospital	Gen	25	15	Part	No	R N	1921
Cooper Hospital ★▲	Gen	275	203	Indep	Yes[1]	R N	1887
Municipal Hospital for Contagious Diseases	Iso	110	31	City	No	M D	1916
West Jersey Homeopathic Hospital ★▲	Gen	249	106	Indep	Yes[1]	R N	1892
Cedargrove 560—Essex							
Essex County Hospital	N&M	1 800	1 779	County	Yes[1]	M D	1872
Chatsworth 100—Burlington							
The Pines	TB	30	15	Indiv	No	M D	1921
Clinton 950—Hunterdon							
New Jersey State Reformatory for Women [2]	Gen	12	4	State	No	Lay	1913
Dover 9 817—Morris							
Dover General Hospital	Gen	24	17	Indep	No	R N	1916
East Orange 61,700—Essex							
Homeopathic Hospital of Essex County ▲	Gen	90	60	Indep	Yes[1]	Lay	1903
Elizabeth 95 783—Union							
Alexian Brothers Hosp ★▲	Gen	125	90	Church	Yes	Lay	1892
Elizabeth General Hospital and Dispensary ★▲	Gen	175	131	Indep	Yes[1]	Lay	1879
Elizabeth Isolation Hosp	Iso	100	3	City	No	Lay	
Elizabeth Orphan Asylum [2]	Chil	6	3	Indep	No	Lay	1858
St Elizabeth s Hospital ★▲	Gen	160	125	Church	Yes[1]	Lay	1904
Englewood 12,590—Bergen							
Daisy Fields Home and Hospital for Crippled Child	Ortho	18	18	Indep	No	R N	1893
Englewood Hospital ★▲	Gen	187	130	Indep	Yes[1]	R N	1888
Mabel F Manahan Sanitarium	Conv	30	25	Indiv	No	R N	
Farmingdale 416—Monmouth							
Tuberculosis Preventorium for Children	TB	215	175	Indep	No	R N	1909
Ft Hancock — Monmouth							
Station Hospital	Gen	50	25	Army	No	M D	1890
Franklin 4 075—Sussex							
Franklin Hospital	Indus	25	16	Indus	No	M D	1908
Glen Gardner, 818—Hunterdon							
New Jersey Sanatorium for Tuberculous Diseases +	TB	297	275	State	No	M D	1907
Grenloch 255—Camden							
Camden County General Hospital	Gen	130	130	County	No	Lay	1882
Camden County Hospital for Mental Diseases	N&M	400	300	County	No	R N	1877
Lakeland Sanatorium	TB	228	133	County	No	M D	1914
Greystone Park — Morris							
New Jersey State Hospital	N&M	3 500	3 437	State	Yes[1]	M D	1876
Hackensack 19 715—Bergen							
Hackensack Hospital ★▲	Gen	250	190	Indep	Yes[1]	R N	1888
Haddonfield 5 646—Camden							
Bancroft School	N&M	80	78	Indep	No	M D	1883
Hoboken 68,166—Hudson							
Farr Sanatorium	Gen	28	12	Indep	No	R N	1923
St Mary s Hospital ★▲	Gen	411	250	Church	Yes	M D	1863
Irvington 33 186—Essex							
Irvington General Hosp ▲	Gen	72	50	City	No	R N	1918
Jamesburg 2 052—Middlesex							
New Jersey State Home for Boys [2]	Chil	16	14	State	No	Lay	1866
Jersey City 315 280—Hudson							
Atkinson Sanatorium	Gen	16	5	Indiv	No	R N	1917
Bergen Private Sanitarium	Gen	40	20	Indep	No	R N	1911
Christ Hospital ★▲	Gen	104	75	Church	Yes[1]	Lay	1873
Fairmount Surgical Sanat	Gen	69	35	Indep	Yes	R N	1911
Greenville Hospital in Jersey City	Gen	60	50	Indep	Yes[1]	R N	1914
Jersey City Hospital ★+▲	Gen	500	500	City	Yes[1]	M D	1868
Jersey Eye Ear Nose and Throat Hospital	EENT	15	7	Indiv	No	R N	1921
St Francis Hospital ★▲	Gen	208	179	Church	Yes	Lay	1864
Salvation Army Door of Hope Hospital	Mater	30	15	Church	No	Lay	1920
Lakewood 3 000—Ocean							
Paul Kimball Hospital	Gen	57	27	Indep	No	R N	1911

NEW JERSEY—Cont City Pop—County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt M D R N Lay	Year Est
Long Branch 13 646—Monmouth							
Dr E C Hazard Hospital	Gen	95	30	Indep	Yes	M D	1920
Monmouth Mem Hosp ★▲	Gen	175	150	Indep	Yes[1]	R N	1889
Longport 100—Atlantic							
Betty Bacharach Home for Afflicted Children	Ortho	85	45	Frat	No	R N	1924
Manasquan 1 705—Monmouth							
Margaret and Sarah Switzer Foundation for Girls	Conv	50	25	Indep	No	Lay	1910
Metuchen 3 334—Middlesex							
Station Hospital	Gen	17	1	Army	No	M D	1918
Midland Park 2 243—Bergen							
Christian Sanatorium	N&M	100	70	Indep	No	Lay	1911
Millville 15 960—Cumberland							
Millville Hospital	Gen	30	15	Indep	No	R N	1915
Montclair 32 922—Essex							
Mountainside Hospital ★▲	Gen	216	132	Indep	Yes[1]	R N	1890
St Vincent's Nursery and Babies Hospital[2]	Chil	50	40	Church	Yes	Lay	1899
Morristown 12,570—Morris							
All Souls Hospital ▲	Gen	91	51	Church	Yes[1]	R N	1891
Aurora Health Farm	Conv	30	24	Indiv	No	M D	1920
Morristown Mem Hosp ★▲	Gen	148	86	Indep	Yes[1]	Lay	1892
Psychiatric Institute +	Metab	137	70	Indep	No	M D	1920
Shongum Sanatorium	TB	50	37	County	No	Lay	1912
Mt Holly 5 750—Burlington							
Burlington County Hosp	Gen	35	27	County	No	R N	1880
Newark 452 513—Essex							
Babies Hospital ▲	Chil	[illegible]	27	Indep	Yes[1]	R N	1896
Home for Incurables and Hospital	Incur	63	62	Indep	Yes	Lay	1883
Hospital and Home for Crippled Children	Ortho	93	59	Indep	Yes	Lay	1892
Hospital for Women and Children ▲	Gen	91	40	Indep	Yes[1]	R N	1880
Hospital of St Barnabas ★▲	Gen	119	97	Church	Yes[1]	Lay	1865
Lincoln Private Hospital[3]	Gen	25	12	Indep	No	Lay	1920
Newark Beth Israel Hosp ★▲	Gen	120	91	Indep	Yes[1]	M D	1906
Newark City Hospital ★▲	Gen	670	631	City	Yes[1]	M D	1882
Newark Eye & Ear Infirm ▲	E E N T	65	60	Indep	Yes	R N	1880
Newark Maternity Hospital	Mater	33	27	Indep	Yes	R N	1912
Newark Memorial Hosp ★▲	Gen	150	108	Indep	Yes[1]	R N	1858
Newark Orphan Asylum	Chil	14	4	Indep	No	Lay	1845
Newark Private Hospital	Gen	55	40	Indep	Yes	R N	1906
Presbyterian Hospital ▲	Gen	64	46	Church	Yes[1]	Lay	1912
St James Hospital ★▲	Gen	100	75	Church	Yes[1]	Lay	1900
St Michael's Hospital ★▲	Gen	300	101	Church	Yes	Lay	1867
Dr Wright's Sanitarium and Maternity Home	Gen	18	10	Indiv	No	M D	1921
New Brunswick 37 984—Middlesex							
Francis E Parker Memorial Home	Conv	27	27	Indiv	No	Lay	1907
Middlesex General Hospital ▲	Gen	90	60	Indep	Yes[1]	R N	1884
St Peter's General Hosp ▲	Gen	92	88	Church	Yes[1]	R N	1907
Newfoundland 564—Morris							
Newfoundland Health Asso	Conv	30	20	Indep	No	M D	1902
New Lisbon 50—Burlington							
Burlington County Hospital for the Insane	N&M	225	200	County	No	Lay	1901
Fairview Sanatorium	TB	105	48	County	No	R N	1918
State Colony for Feebleminded Males	FeMi	330	320	State	No	Lay	1916
Northfield 1 127—Atlantic							
Atlantic County Hospital for Mental Diseases	N&M	450	250	County	No	M D	1895
Atlantic County Hospital for Tuberculous Diseases	TB	50	29	County	No	Lay	1916
Ocean City, 2,512—Cape May							
Ocean City Seashore Home for Babies	Chil	40	29	Indep	No	Lay	1911
Ocean Grove 3 050—Monmouth							
Methodist Episcopal Home for Aged of New Jersey	Gen	10	5	Church	No	Lay	1907
Oceanport 415—Monmouth							
Station Hospital	Gen	50	15	Army	No	M D	1917
Orange 35 800—Essex							
New Jersey Orthopedic Hospital and Dispensary	Ortho	35	32	Indep	No	Lay	1903
Orange Memorial Hosp ★▲	Gen	268	149	Indep	Yes[1]	Lay	1878
St. Mary's Hospital ★▲	Gen	125	113	Church	Yes[1]	R N	1906
Passaic 68 979—Passaic							
Passaic Eye Ear Nose and Throat Private Hospital	E E N T	27	6	Indiv	Yes	M D	1912
Passaic General Hospital ★▲	Gen	200	125	Indep	Yes[1]	R N	1892
Passaic Municipal Hospital	Iso	25	6	City	No	M D	1904
St Mary's Hospital ▲[3]	Gen	99	67	Church	Yes[1]	Lay	1895
Paterson 143 000—Passaic							
Nathan and Miriam Barnert Memorial Hospital ★▲	Gen	100	80	Indep	Yes[1]	M D	1910
Paterson City Hospital	TB Iso	75	70	City	No	Lay	1896
Paterson Eye and Ear Infirmary	E&E	8	4	Indep	No	R N	1883
Paterson General Hosp ★▲	Gen	251	129	Indep	Yes[1]	Lay	1872
Riverlawn Sanatorium	N&M	50	20	Indep	No	M D	1892
St Joseph's Hospital ★▲	Gen	262	150	Church	Yes[1]	Lay	1869
Pedricktown 615—Salem							
Station Hospital	Gen	5	2	Army	No	M D	1922
Perth Amboy 48 100—Middlesex							
Perth Amboy City Hosp ▲	Gen	90	57	Indep	Yes[1]	R N	1899
Phillipsburg 18 633—Warren							
Warren Hospital	Gen	66	20	Indep	Yes[1]	R N	1923
Plainfield 32,500—Union							
Muhlenberg Hospital ★▲	Gen	165	135	Indep	Yes[1]	R N	1877
Plainfield Sanitarium[2]	Gen	55	15		No	M D	1879
Point Pleasant 1 575—Ocean							
Point Pleasant Hospital	Gen	40	30	Indiv	No	M D	1920
Pompton Lakes 2 008—Passaic							
St Paul's Deaconess Home and Hospital[2, 3]	Gen	40	5	Church	Yes	M D	19[illegible]2
Princeton 5 917—Mercer							
Isabella McCosh Infirmary	Gen	51	16	Indep	No	R N	189[illegible]
Princeton Hospital	Gen	56	12	Indep	No	R N	1918
Rahway 12 200—Union							
New Jersey Reformatory Hospital[2]	Gen	14	5	State	No	Lay	1901
Ridgewood 7,580—Bergen							
"Bergen Pines" Bergen County Hospital	TB Iso	250	130	County	No	M D	1916
Riverside 4 010—Burlington							
Zurbrugg Memorial Hosp[3]	Gen	12	6	Indep	No	R N	1913
Riverton 2 341—Burlington							
Cinnaminson Home	Conv	30	15	Indep	No	Lay	
Salem 7 435—Salem							
Salem County Mem Hosp	Gen	33	20	Indep	No	Lay	1919
Scotch Plains 1 010—Union							
Bonnie Burn Sanatorium	TB	290	273	County	No	M D	1912
Sea Isle City 564—Cape May							
Sea Isle City Home and Emergency Hospital[2]	Gen	10	5	Indiv	No	Lay	1925
Secaucus 5 423—Hudson							
Hudson County Hospital	Gen	195	180	County	No	M D	1920
Hudson County Hospital for Insane	N&M	1 200	1 025	County	No	M D	1873
Hudson County Smallpox Hospital	Iso	50	30	County	No	Lay	1873
Hudson County Tuberculosis Hospital and Sanat	TB	202	189	County	No	M D	1909
Skillman 23—Somerset							
New Jersey State Village for Epileptics +	Epil	1 000	923	State	No	M D	1898
Somerville 6 718—Somerset							
Somerset Hospital +	Gen	73	37	Indep	Yes[1]	R N	1900
South Amboy 7 897—Middlesex							
South Amboy Mem Hosp	Gen	30	10	Indep	No	R N	1918
South Orange 7 274—Essex							
Newark City Almshouse	Gen	40	29	City	No	Lay	
Newark Convalescent Hosp	Conv	148	91	City	No	M D	1906
Spring Lake Beach 853—Monmouth							
Ann May Memorial Homeopathic Hospital ▲	Gen	70	57	Indep	Yes[1]	Lay	1902
Summit 11 687—Union							
Fair Oaks Sanatorium	N&M	50	38	Indep	No	M D	1902
Overlook Hospital ▲	Gen	120	54	Indep	Yes[1]	R N	1910
Sussex 1 318—Sussex							
Alexander Linn Hospital	Gen	20	7	Cy&Co	No	M D	1920
Teaneck 3 260—Bergen							
Bright Side Sanitarium	Incur	26	25	Indiv	No	Lay	1916
Holy Name Hospital ★▲	Gen	175	110	Church	Yes[1]	Lay	1925
Toms River 1 800—Ocean							
American Legion Convalescent Home	Conv	18	9	Indep	No	Lay	1923
Trenton 134 000—Mercer							
Chambersburg Hospital	Gen	20	17	Indep	No	Lay	1923
Mercer Hospital ★+▲	Gen	154	95	Indep	Yes[1]	Lay	1892
Municipal Colony ▲	Iso	314	184	City	No	M D	1906
New Jersey School for the Deaf[2]	Gen	20	12	State	No	Lay	1897
New Jersey State Hospital	N&M	2 550	2 144	State	Yes[1]	M D	1848
New Jersey State Prison Hospital[2]	Gen	46	30	State	No	M D	1835
Orthopaedic Hospital and Dispensary	Ortho	30	25	Indep	No	R N	1922
St Francis Hospital ★▲	Gen	255	120	Church	Yes[1]	Lay	1860
State Home for Girl	Gen	13	5	State	No	Lay	1871
William McKinley Memorial Hospital ★▲	Gen	108	73	Indep	Yes[1]	Lay	1887
Union City 63 600—Union							
Hamilton Sanitarium	Gen	27	15	Part	No	Lay	1921
North Hudson Hospital ★▲	Gen	159	85	Indep	No	R N	1901
Ventnor 2 193—Atlantic							
Jewish Seaside Home for Invalids	Conv	73	45	Indep	No	Lay	1892
North American Sanitarium for Surgical Tuberculosis	TB	42	34	Indep	No	R N	1920
Verona, 3 039—Essex							
Essex Mountain Sanatorium	TB	276	213	County	No	M D	1917
Montclair Fresh Air and Convalescent Home[3]	Conv	40	36	Indep	No	Lay	1902
Vineland 6 799—Cumberland							
Newcomb Hospital ▲	Gen	70	47	Indep	Yes[1]	Lay	1924
New Jersey Memorial Home for Disabled Soldiers Sailors Marines and their Wives	Gen	50	40	State	No	Lay	1895
New Jersey State Institution for the Care and Training of Feebleminded Girls and Women	N&M	27	17	State	No	Lay	1888
Training School at Vineland	N&M	40	15	Indep	No	Lay	1888
Wildwood 2 790—Cape May							
Margaret Mace's Hospital[3]	Gen	20	6	Indiv	No	M D	1917
Woodbine 1 406—Cape May							
Woodbine Colony for Feebleminded Males	FeMi	250	209	State	No	Lay	1921
Woodbury 5 801—Gloucester							
Brewer Hospital	Gen	15	10	Indiv	No	M D	1919
Underwood Hospital	Gen	30	20	Indiv	No	Lay	1915

Total registered hospitals in New Jersey 177 capacity, 25 010 average census 21 858 *Hospitals not admitted to the register* 6 capacity 174

NEW MEXICO City, Pop—County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt MD RN Lay	Year Est
Alamogordo 2,363—Otero							
Rousseau Hospital	Gen	7	4	Indiv	No	Lay	1908
Albuquerque 21 600—Bernalillo							
Albuquerque Indian School Hospital	Gen	40	30	Indian	Yes	M D	1890
Albuquerque Sanatorium	TB	55	41	Indep	No	M D	1909
Atchison, Topeka & Santa Fe Hospital	Indus	70	15	Indus	No	M D	1886
Children's Home and Hosp	Chil	30	17	Indep	No	M D	1906
T S Marshall Sanatorium	TB	12	9	Indiv	No	Lay	1921
Methodist Deaconess Sanat	TB	65	60	Church	No	Lay	1912
Monkbridge Manor	Conv TB	25	12	Indiv	No	R N	1926
St Joseph's Sanatorium and Hospital ▲	Gen	140	110	Church	Yes[1]	Lay	1902
Southwestern Presbyterian Sanatorium	TB Gen	140	100	Church	No	R N	1908
Trachoma Hospital	Trach	50	20	Indian	No	M D	1925
Women's and Children's Hospital	Gen	38	22	Indep	No	R N	1910
Allison 451—McKinley							
Diamond Coal Company's Hospital	Indus	6	3	Indus	No	M D	1913
Black Rock — McKinley							
Black Rock Sanatorium	TB	16	16	Indian	No	M D	1913
Carlsbad 2 205—Eddy							
Eddy County Hospital [3]	Gen	17	8	County	No	Lay	1908
St Francis Hospital	Gen	28	12	Church	No	Lay	1917
Cloudcroft 200—Otero							
Cloudcroft Baby Sanat	Chil	15	7	Indep	No	Lay	1910
Clovis 4 901—Curry							
Atchison Topeka & Santa Fe Hospital	Indus	60	18	Indus	No	M D	1914
New Mexico Baptist Hosp	Gen	15	7	Church	No	R N	1920
Crownpoint 52—McKinley							
Pueblo Bonito Indian School Hospital	Gen	30	6	Indian	No	Lay	1914
Dawson 6 500—Colfax							
Phelps Dodge Corporation Hospital [3]	Indus	30	16	Indus	No	M D	1904
Deming 3 212—Luna							
Deming Ladies Hospital	Gen	24	4	Indep	No	Lay	1900
Holy Cross Sanatorium	TB	200	40	Church	No	Lay	1922
Dulce 101—Rio Arriba							
Jicarilla Agency Hospital	Gen	24	17	Indian	No	M D	1917
Jicarilla Southern Mountain Sanatorium	TB	50	57	Indian	No	M D	1902
Farmington 728—San Juan							
San Juan Hospital	Gen	12	6	Indep	No	M D	1910
Ft Bayard 509—Grant							
United States Veterans Hospital No 55 ▲	TB	450	300	VetBur	No	M D	1920
Ft Stanton 218—Lincoln							
United States Marine Hospital No 9 ▲	TB	236	224	USPHS	No	M D	1899
Gallup 3 920—McKinley							
St Mary's Hospital ▲	Gen	80	75	Church	No	Lay	1918
Gardiner 1 120—Colfax							
Gardiner Hospital	Indus	40	9	Indus	No	M D	1900
Laguna 1 091—Valencia							
Laguna Sanatorium for Tuberculosis	TB	63	37	Indian	No	M D	1907
Las Vegas 4 304—San Miguel							
Carpenter Memorial Hosp	Gen	25	12	Indep	No	R N	1884
New Mexico Insane Asylum	N&M	500	500	State	No	M D	1892
St Anthony's Sanitarium and Hospital	Gen	56	4	Church	No	Lay	1896
Lordsburg 1 325—Hidalgo							
Lordsburg Hospital	Gen	16	6	Indep	No	M D	1920
Mescalero 175—Otero							
Mescalero Indian Hospital	Gen TB	50	14	Indian	No	Lay	1916
Raton 5 544—Colfax							
New Mexico Miner's Hosp	Gen	28	11	State	No	R N	1909
Rehoboth — McKinley							
Rehoboth Mission Hospital	Gen	30	28	Church	No	M D	1909
Roswell 7 062—Chaves							
St Mary's Hospital ▲	Gen	52	25	Church	No	Lay	1904
Roy 564—Harding							
Plumlee Hospital	Gen	15	5	Indiv	No	M D	1916
Santa Fe 7 236—Santa Fe							
New Mexico Penitentiary Hospital -	Gen	15	8	State	No	M D	1885
St Vincent's Sanatorium and Hospital ▲	TB Gen	80	52	Church	Yes[1]	Lay	1865
Santa Fe Indian School Hospital	Gen	35	4	Indian	No	R N	1896
Sunmount Sanatorium	TB	50	46	Indep	No	M D	1908
Santa Rita 1 890—Grant							
Nevada Consolidated Company Hospital	Indus	50	22	Indus	No	M D	
Shiprock 161—San Juan							
San Juan Indian Hospital	Gen	62	35	Indian	No	Lay	1919
Silver City 2 662—Grant							
Grant County Hospital	Gen	15	8	County	No	R N	1886
New Mexico Cottage Sanat	TB	70	35	Indep	No	Lay	1905
Springer 915—Colfax							
Springer Hospital	Gen	5	2	Indiv	No	Lay	1914
Tucumcari 3 117—Quay							
Tucumcari Hospital	Gen	15	8	Indiv	No	M D	1909
Tularosa 1,096—Otero							
Home Sanatorium	TB	22	8	Indiv	No	Lay	1916
Valley Ranch 108—San Miguel							
Valley Ranch	Conv	75	40	Indep	No	Lay	1913
Valmora — Mora							
Valmora Sanatorium	TB	70	45	Indep	No	M D	1910

Total registered hospitals in New Mexico 53 capacity, 3 407 average census, 2,220 Hospitals not admitted to the register, 2 capacity, 14

NEW YORK City Pop—County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt MD R.N Lay	Year Est
Albany, 118 700—Albany							
Albany County Hospital	Gen	98	82	County	No	Lay	
Albany Hospital ★▲	Gen	420	317	Indep	Yes[1]	M D	1849
Albany's Hospital for Incurables [3]	Incur	100	90	Indep	No	Lay	1884
Anthony N Brady Maternity Hospital▲	Mat	60	50	Church	No	R N	1915
Child's Hospital	Chil	60	40	Church	Yes	Lay	1874
Evergreens Sanatorium Sch	MenDef	12	7	Indiv	No	M D	1919
Memorial Hospital▲	Gen	126	104	Indep	Yes[1]	Lay	1872
St Margaret's House and Hospital -	Chil	20	14	Indep	No	R N	1883
St Peter's Hospital★▲	Gen	135	80	Church	Yes[1]	Lay	1869
Albion 5 206—Orleans							
Albion State Training School [2]	Gen	15	5	State	No	Lay	1897
Arnold Gregory Memorial Hospital	Gen	21	12	Indep	No	R N	1916
Orleans County Hospital	Gen	30	15	County	No	Lay	1905
Amityville 4 215—Suffolk							
Long Island Home	N&M	164	164	Indep	No	M D	1882
Louden Knickerbocker Hall	N&M	133	106	Part	No	Lay	1886
Dr Reed Private Hospital	Gen	15	10	Indiv	No	M D	1923
Amsterdam, 35 600—Montgomery							
Amsterdam City Hospital▲	Gen	74	60	Indep	Yes[1]	Lay	1888
Montgomery County Sanatorium	TB	42	40	County	No	M D	1910
St Mary's Hospital▲	Gen	102	43	Church	Yes[1]	Lay	1903
Auburn 35 677—Cayuga							
Auburn City Hospital ★▲	Gen	133	78	Indep	Yes[1]	Lay	1878
Auburn State Prison Hospital -	Gen	50	22	State	No	M D	1816
Mercy Hospital of Auburn	Gen	25	19	Church	Yes	Lay	1919
The Pines [3]	N&M	15	7	Indiv	No	M D	1891
Sunny Crest Sanatorium	TB	36	24	City	No	R N	1912
Women's Prison Hospital [2]	Gen	15	2	State	No	M D	1893
Ballston Spa 4 103—Saratoga							
Carpentier Infirmary [2]	Gen	25	13	County	No	Lay	1903
Batavia 16 000—Genesee							
New York State School for the Blind -	Gen	24	2	State	No	Lay	1865
St Jerome's Hospital▲	Gen	60	50	Church	Yes	Lay	1917
Women's Hospital	Gen	50	29	Indep	Yes	R N	1900
Bath 4 795—Steuben							
Bath Hospital	Gen	50	35	Part	Yes	R N	19 9
New York State Camp for Veterans -	Gen	251	108	State	No	Lay	1876
Pleasant Valley Sanatorium	TB	32	28	County	No	M D	1918
Bay Shore 4 080—Suffolk							
Dr King's Private Hospital	Gen	30	28	Indiv	No	R N	1918
Southside Hospital▲	Gen	54	35	Indep	No	R N	1913
Beacon 11 621—Dutchess							
Craig House	N&M	65	60	Indep	No	M D	1915
Highland Hospital	Gen	43	18	Indep	No	R.N	1871
Matteawan State Hosp	N&M	1 020	1 006	State	No	M D	1859
Bedford Hills 1 000—Westchester							
Montefiore Hospital	TB	220	207	Indep	No	M D	1897
New York State Reformatory for Women [2]	Gen	28	22	State	No	M D	1900
Binghamton 72 900—Broome							
Binghamton City Hosp ★▲	Gen	370	146	City	Yes[1]	Lay	1893
Binghampton Private Hospital [3]	Gen	14	6	Indiv	No	Lay	1904
Binghamton State Hosp+	N&M	2 863	2 754	State	Yes[1]	M D	1881
Binghamton Training School for Nervous Backward and Mental Defectives	N&M	30	26	Indiv	No	Lay	1881
Endicott Johnson Clinton Street Hospital	Indus	30	15	Indus	No	M D	1919
Dr Lyon's Sanitarium [3]	N&M	10	8	Indiv	No	M D	1910
Moore Overton Hospital	Gen	25	15	Part	No	R N	1909
Susquehanna Valley Home [2]	Chil	10	4	Indep	No	Lay	1869
Breesport 498—Chemung							
Chemung County Almshouse [2]	Gen	15	8	County	No	Lay	
Brentwood 534—Suffolk							
Ross Sanitarium	Conv	30	27	Indep	No	M D	1898
Brewster 859—Putnam							
Mountainbrook Farm	Conv	25	22	Indiv	No	M D	1911
Bronxville 3 055—Westchester							
Lawrence Hospital▲	Gen	78	40	Indep	No	Lay	1903
Brooklyn 2 203 235—Kings							
Baptist Home of Brooklyn -	Gen	12	6	Church	No	Lay	1869
Bay Ridge Sanitarium	Gen	50	40	Indep	No	Lay	1912
Bedford Maternity Hosp	Mater	20	16	Indep	No	R N	1919
Bedford Sanitarium [3]	Gen	14	9	Indiv	No	Lay	1905
Bethany Deaconess Hosp	Gen	100	40	Church	No	Lay	1894
Beth Moses Hospital★▲	Gen	182	152	Indep	No	M D	1920
Borough Park Maternity Hospital	Mater	107	70	Indiv	No	R N	1921
Brooklyn Eye and Ear Hospital+▲	EENT	82	23	Indep	Yes	Lay	1868
Brooklyn Hebrew Home and Hospital for the Aged	Gen	185	180	Indep	No	Lay	1907
Brooklyn Hebrew Maternity Hospital	Mater	27	23	Indep	No	R N	1914
Brooklyn Hebrew Orphan Asylum [2]	Chil	70	20	Indep	No	Lay	1878
Brooklyn Home for Children	Chil	20	10	Indep	No	Lay	1854
Brooklyn Home for Consumptives	TB	103	98	Indep	No	R.N	1881
Brooklyn Hospital★▲	Gen	200	203	Indep	Yes[1]	M D	[illegible]
Brooklyn Maternity Hosp [3]	Gen	29	12	Indiv	No	Lay	
Brooklyn State Hospital	N&M	1 683	1 600	State	Yes[1]	M D	
Brownsville and East New York Hospital★▲	Gen	120	110	Indep	No	Lay	
Bushwick Hospital▲	Gen	92	78	Indep	Yes[1]	Lay	

NEW YORK—Cont City Pop —County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt M D R N Lay	Year Est
Caledonian Hospital of the City of New York[3]	Gen	25	20	Indep	Yes	R N	1909
Carson C Peck Memorial Hospital▲	Gen	90	85	Indep	Yes[1]	Lay	1919
Coney Island Hospital▲	Gen	141	95	City	No	M D	1910
Cumberland Hospital ★▲	Gen	450	312	City	Yes[1]	M.D	1852
Del am Sanitarium	Mater	8	7	Indep	No	M D	1918
Evangelical Deaconess Hosp	Gen	18	10	Indep	No	Lay	1923
Faith Home for Incurables	Incur	70	65	Indiv	No	Lay	1875
Flatbush Sanitarium	Gen	13	8	Indiv	No	M D	1915
Greenpoint Hospital★▲	Gen	239	142	City	No	M.D	1912
Hamilton Private Hospital	Gen	25	18	Indiv	No	Lay	1910
Harbor Hospital	Gen	55	34	Indep	No	R N	1914
Hospital of the Holy Family ★▲	Gen	110	85	Church	Yes[1]	R N	1909
House of St Giles the Cripple▲	Orth	45	34	Church	No	Lay	1891
Jewish Hospital of Brooklyn ★+▲	Gen	233	284	Indep	Yes[1]	M D	1906
Kings County Hospital★▲	Gen	1 809	1 450	City	Yes[1]	M D	1832
Kingston Avenue Hospital▲	Iso	410	241	City	No	M D	1889
Knorr Sanitarium	Mater	16	12	Indiv	No	R N	1912
Long Island College Hospital★+▲	Gen	440	356	Indep	Yes[1]	Lay	1858
Lutheran Hospital	Gen	36	30	Church	No	R.N	1881
Methodist Episcopal Church Home[2]	Gen	10	10	Church	No	Lay	1883
Methodist Episcopal Hospital ★▲	Gen	375	241	Church	Yes[1]	Lay	1881
Midwood Sanitarium	Gen	34	30	Indep	No	R N	1907
Norwegian Lutheran Deaconess Home and Hospital★▲	Gen	167	161	Church	Yes[1]	Lay	1883
Orphan Asylum Society of the City of Brooklyn	Chil	19	5	Indep	No	Lay	1833
Prospect Heights Hospital and Brooklyn Maternity▲	Gen	109	76	Indep	Yes[1]	Lay	1871
Ridgewood Sanitarium	Gen	15	12	Indep	No	R N	1914
Riverdale Hospital	Gen	50	25	Indiv	No	Lay	1926
St Catherine s Hospital ★▲	Gen	259	235	Church	Yes[1]	R.N	1870
St Cecelia Maternity Hospital	Mater	56	New	Church	No	Lay	1927
St John s Hospital ★▲	Gen	100(a)	73	Church	Yes[1]	Lay	1851
St Mary s Hospital of the City of Brooklyn★▲	Gen	253	180	Church	Yes[1]	R N	1879
St Peter s Hospital★▲	Gen	250	200	Church	Yes	Lay	1834
St Phebe s Mission and Convalescent Home	Conv	16	10	Indep	No	Lay	1886
Samaritan Hospital of Brooklyn	Gen	51	45	Church	No	R N	1904
Shore Road Hospital	Gen	60	40	Indep	No	R N	1925
Station Hospital	Gen	58	20	Army	No	M D	1836
Swedish Hospital▲	Gen	64	58	Church	Yes[1]	R N	1896
United Israel Zion Hosp ★▲	Gen	205	175	Indep	No	Lay	1922
United States Naval Hosp ★▲	Gen	853	305	Navy	No	M.D	1824
Unity Hospital	Gen	259	104	Indep	No	Lay	1915
Dr Wade s Private Hosp	Gen	40	35	Indiv	Yes	M D	1918
Williamsburgh Maternity	Mater	75	43	Indep	No	M D	1918
Wyckoff Heights Hospital of Brooklyn★▲	Gen	160	148	Indep	Yes[1]	Lay	1899
Buffalo 544 300—Erie							
Buffalo City Hospital★+▲	Gen	825	771	City	Yes[1]	M D	1917
Buffalo Columbus Hosp▲	Gen	73	67	Indep	Yes	M D	1908
Buffalo General Hosp★+▲	Gen	376	281	Indep	Yes[1]	M D	1855
Buffalo Hospital of the Sisters of Charity★▲	Gen	215	129	Church	Yes[1]	R.N	1849
Buffalo State Hospital	N&M	2 244	2,200	State	Yes[1]	M D	1880
Charity Eye Ear and Throat Hospital of Erie County	EENT	9	4	County	No	R N	1891
Children s Hospital of Buffalo +▲	Chil	124	101	Indep	Yes[1]	R N	1892
Deaconess Hospital★▲	Gen	173	135	Indep	Yes[1]	R.N	1896
Emergency Hospital of the Sisters of Charity ★▲	Gen	100	85	Church	Yes	R.N	1902
German Roman Catholic Orphan Asylum	Chil	24	10	Church	No	Lay	1861
Lafayette General Hospital	Gen	50	27	Indep	Yes	R N	1910
Memorial Hospital of Buffalo	Gen	55	30	Indep	No	Lay	1901
Mercy Hospital[3]	Gen	28	24	Church	No	Lay	1904
Millard Fillmore Hospital★	Gen	130	128	Indep	Yes[1]	Lay	1872
Parkside Sanitarium	N&M	40	30	Indiv	No	M D	1902
Providence Retreat	N&M	180	132	Church	No	R N	1860
St Mary s Hospital▲	Mater	76	50	Church	Yes	R N	1852
Salvation Army Maternity Hospital	Mater	9	5	Church	No	R N	1900
State Institute for the Study of Malignant Disease	Sk&Ca	25	12	State	No	M D	1898
United States Marine Hospital No 3▲	Gen	71	71	USPHS	No	M D	1873
Cambridge 1 626—Washington							
Mary McClellan Hospital▲	Gen	50	38	Indep	Yes[1]	R.N	1919
Camden 2 105—Oneida							
Healthforte — Dr Bell s Private Rest Home	N&M	15	9	Indiv	No	M D	1926
Canandaigua 7 356—Ontario							
Brigham Hall Hospital	N&M	70	51	Indep	No	M D	1859
Canandaigua Health Home	Conv	21	19	Indiv	No	M D	1912
Frederick Ferris Thompson Hospital▲	Gen	95	65	Indep	Yes[1]	R N	1903
Canastota 4 223—Madison							
Canastota Memorial Hospital	Gen	13	8	City	No	Lay	1912
Cassadaga 495—Chautauqua							
Newton Memorial Hospital	TB	100	86	County	No	M.D	1920
Castile 1 013—Wyoming							
Greene Sanitarium	Conv	75	45	Indiv	No	M D	1849

NEW YORK—Cont City Pop —County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt M D R N Lay	Year Est
Castle Point 23—Dutchess							
United States Veterans Hospital No 98▲	TB	400	389	VetBur	No	M.D	1921
Central Islip 675—Suffolk							
Central Islip State Hospital	N&M	6 360	5 931	State	Yes[1]	M D	1889
Central Valley 800—Orange							
Dr MacDonald s House	N&M	30	30	Part	No	M D	1889
Chappaqua 733—Westchester							
Elizabeth Milbank Anderson Home for Convalescent Children	Conv	175	175	Indep	No	M D	1908
Chenango Bridge 360—Broome							
Broome County Tuberculosis Hospital	TB	78	56	County	No	M D	1919
Churchville 622—Monroe							
Convalescent Home of Rochester	Conv	12	7	Indep	No	R N	1916
Clifton Springs 1776—Ontario							
Clifton Springs Sanitarium and Clinic★+▲	Gen	459	314	Indep	Yes[1]	M D	1850
Cold Spring 1 494—Putnam							
Julia L Butterfield Memorial Hospital	Gen	23	12	Indep	No	R N	1921
Loretto Rest	Conv	15	7	Church	No	Lay	1921
Cohoes 23 315—Albany							
Cohoes Hospital▲	Gen	55	38	Indep	Yes[1]	R.N	1898
Cooperstown 2 732—Otsego							
Otsego County Home	Gen	14	10	County	No	Lay	
Mary Imogene Bassett Hospital	Gen	90	65	Indep	No	M D	1921
Susan Fenimore Cooper Foundation	Chil	8	1	Church	No	M D	1870
Corning 15 722—Steuben							
Corning Hospital	Gen	85	37	Indep	Yes[1]	R N	1900
Corona —— Queens							
Dr Coombes Sanitarium	N&M	66	57	Indep	No	M D	1900
Cortland 13 879—Cortland							
Cortland County Hospital	Gen	68	66	Indep	Yes[1]	R N	1891
Cortland Sanitarium	Conv	14	12	Indiv	No	M D	1914
Creedmoor —— Queens							
Creedmoor Division Brooklyn State Hospital	N&M	726	623	State	No	M D	1912
Cuba 1 611—Allegany							
Cuba Memorial Hospital	Gen	15	5	Indep	No	R N	1923
Dannemora 2 955—Clinton							
Clinton Prison General & TB Hospital -	GenTB	254	209	State	No	Lay	1845
Dannemora State Hospital	N&M	538	500	State	No	M D	1900
Dansville 4 569—Livingston							
Dansville General Hospital	Gen	22	20	Indep	Yes	R N	1920
Jackson Memorial Hospital	Gen	100	50	Indep	No	M D	1925
Delhi 1 775—Delaware							
Delaware County Tuberculosis Sanatorium	TB	28	14	County	No	M D	1920
Dewittville 153—Chautauqua							
Chautauqua County Almshouse and Hospital	Gen	106	100	County	No	Lay	1830
Dobbs Ferry 5 020—Westchester							
Dobbs Ferry Hospital▲	Gen	50	18	Indep	No	R N	1895
Dunkirk 19 912—Chautauqua							
Brook s Memorial Hospital	Gen	60	35	Indep	No	R N	1899
Eastview 161—Westchester							
Solomon and Betty Loeb Memorial Home for Convalescents	Conv	108	106	Indep	No	R N	1904
Elmira 48 359—Chemung							
Arnot Ogden Memorial Hospital★▲	Gen	100	94	Indep	Yes[1]	R.N	1882
Chemung Sanatorium	TB	35	28	County	No	M D	1918
Federation Farm	TB	22	22	Indep	No	Lay	1917
Gleason Health Resort	Conv	40	25	Indiv	No	M D	1852
New York State Reformatory[2]	Gen	83	31	State	No	M D	1876
O Connor s Private Hospital	Conv	9	3	Indiv	No	R.N	1909
St Joseph s Hospital▲	Gen	150	115	Church	Yes[1]	Lay	1908
Endicott 15 627—Broome							
Ideal Hospital of Endicott	Gen	53	30	City	No	R.N	1917
Farmingdale 2 091—Nassau							
Nassau County Sanatorium	TB	181	118	County	No	M D	1918
Far Rockaway —— Queens							
Jacob D Posner—Brooklyn Jewish Home for Convalescents	Conv	75	18	Indep	No	R.N	1921
Natalie and Louis Heinsheimer Memorial Home	TB	56	32	Indep	No	R N	1925
St Joseph s Hospital[3]	Gen	102	85	Church	Yes[1]	Lay	1905
Seaside Hospital	Card	35	32	Indep	No	R N	1920
Wave Crest Convalescent Home	Conv	60	35	Indep	No	R N	1920
Fayetteville 1 813—Onondaga							
Camp Hillcrest	TB	*54*	*51*	Indep	No	*R N*	*1910*
Fishers Island 324—Suffolk							
Station Hospital	Gen	50	7	Army	No	M D	1901
Flushing — Queens							
Flushing Hospital and Dispensary ★▲	Gen	130	126	Indep	Yes[1]	Lay	1882
Station Hospital	Gen	80	48	Army	No	M D	1862
Ft Niagara — *Niagara*							
Station Hospital	Gen	15	9	Army	No	M D	1869
Ft Slocum — Westchester							
Station Hospital	Gen	125	55	Army	No	M.D	1896
Ft Wadsworth — Richmond							
Station Hospital	Gen	14	10	Army	No	M D	1855
Freeville 484—Tompkins							
George Junior Republic Association Hospital[3]	Gen	15	8	Indep	No	Lay	1895
Fulton 12 571—Oswego							
Albert Lindley Lee Memorial Hospital	Gen	34	22	City	Yes	R.N	1910

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City Pop—County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt MD RN Lay	Year Est
Gabriels 200—Franklin							
Sanatorium Gabriels	TB	146	109	Church	No	Lay	1897
Garden City 3 141—Nassau							
Station Hospital	Gen	25	9	Army	No	M D	1918
Geneva 15 908—Ontario							
Geneva General Hospital	Gen	68	52	Indep	Yes[1]	M D	1889
Glen Cove 10 822—Nassau							
North Country Community Hospital	Gen	110	75	Indep	No	R N	1922
Parkside Hospital	Gen	16	8	Part	No	R N	1926
Glens Falls 17 851—Warren							
Glens Falls Hospital ▲	Gen	[illegible]	69	Indep	Yes[1]	Lay	1897
Westmount Sanatorium	TB	52	New	County	No	M D	
Gloversville 22 110—Fulton							
Nathan Littauer Hospital ▲	Gen	110	49	Indep	Yes[1]	Lay	1890
Summit View Sanatorium	TB	[illegible]	19	County	No	M D	1912
Goshen 2 945—Orange							
Goshen Emergency Hospital	Gen	17	13	Indep	No	R N	1908
Interpines	N&M	65	55	Indiv	No	M D	1890
Dr L J Kiernan's Health Farm	Al&Dr	12	6	Indiv	No	M D	1900
Orange County Almshouse Hospital[2]	Gen	24	21	County	No	Lay	1911
Governors Island — New York							
Station Hospital	Gen	36	33	Army	No	M D	1801
Greenport 3 122—Suffolk							
Eastern Long Island Hosp	Gen	[illegible]	14	Indep	No	R N	190[illegible]
Green Ridge — Richmond							
St Michael's Home for Destitute Children[2]	Gen	[illegible]	6	Church	No	Lay	1884
Harmon on Hudson 110—Westchester							
Crichton House	N&M	20	18	Indiv	No	M D	1921
Harrison 1 485—Westchester							
Dr Brook House	N&M	10	8	Indiv	No	M D	1920
Miriam Osborn Memorial Home[2]	Gen	21	18	Indep	No	Lay	1892
St Vincent's Retreat	N&M	180	166	Church	No	Lay	18[illegible]
Hastings Upon Hudson 6 311—Westchester							
Hastings Hillside Hospital	N&M	40	New	Indep	No	M D	1927
Helmuth — Erie							
Gowanda State Homeopathic Hospital	N&M	1 28[illegible]	1 240	State	Yes[1]	M D	1898
Hempstead 9 952—Nassau							
Mercy Hospital	Gen	19	13	Church	No	Lay	1913
Herkimer, 10 910—Herkimer							
Herkimer County Hospital	Gen	12	10	County	No	Lay	1917
Herkimer Memorial Hosp	Gen	30	18	Indep	No	R N	1925
Holcomb 328—Ontario							
Oak Mount Sanatorium	TB	45	44	County	No	M D	1910
Holtsville 260—Suffolk							
Suffolk Sanatorium	TB	9[illegible]	90	County	No	M D	1916
Hornell 15 784—Steuben							
Bethesda Hospital ▲	Gen	49	40	Indep	Yes	R N	1917
St James Mercy Hosp ▲	Gen	62	40	Church	Yes	Lay	1890
Hudson 11 755—Columbia							
Hudson City Hospital ▲	Gen	90	50	Cy&Co	Yes[1]	R N	1889
Hudson Orphan and Relief Association[2]	Chil	10	5	Indep	No	Lay	1846
New York State Training School for Girls	Gen	40	5	State	No	M D	1904
Huntington 6 [illegible]00—Suffolk							
Huntington Hospital	Gen	35	30	Indep	No	R N	1915
Ilion 10 426—Herkimer							
Ilion Hospital	Gen	25	17	Indep	No	R N	1909
Industry — Monroe							
State Agricultural and Industrial School[2]	Gen	50	26	State	No	M D	1849
Iroquois — Erie							
Thomas Indian School	Gen	14	3	State	No	Lay	1885
Irvington 3 [illegible]93—Westchester							
Irvington House	Card	68	68	Indep	No	R N	1920
Ithaca 16 918—Tompkins							
Cayuga Preventorium	TB	40	20	Indep	No	R N	1914
Ithaca Memorial Hospital	Gen	106	84	Indep	Yes[1]	R N	1889
Jamaica (population included in New York City)—Queens							
Chapin Home for the Aged and Infirm[3]	Gen	17	8	City	No	Lay	1869
Hillside Sanitarium	Gen	35	17	Indiv	No	Lay	1926
Mary Immaculate Hosp ▲	Gen	80	75	Church	Yes[1]	R N	1902
Queensboro Hospital ▲	Iso	74	13	City	No	M D	1916
Jamestown 43 414—Chautauqua							
Jamestown General Hosp ▲	Gen	86	78	City	Yes[1]	R N	1911
Woman's Christian Association Hospital ▲	Gen	56	47	Indep	Yes[1]	R N	1885
Johnson City 11 169—Broome							
Charles S Wilson Memorial Hospital	Gen	151	125	Indep	Yes[1]	R N	19[illegible]2
Katonah 1 409—Westchester							
Hillbourne Farms	Nerv	13	10	Indep	No	M D	1904
Kings Park 1 067—Suffolk							
Kings Park State Hospital	N&M	5 210	5 005	State	Yes[1]	M D	1896
Kingston 28 099—Ulster							
Kingston Hospital ▲	Gen	76	50	Indep	Yes[1]	R N	1893
Our Lady of Victory Sanit ▲	Gen	90	54	Church	Yes[1]	R N	1902
Dr C O Sahler Sanitarium	N&M	125	50	Indep	No	Lay	1896
Ulster County Tuberculosis Hospital	TB	22	20	County	No	M D	1909
Lackawanna 20 196—Erie							
Moses Taylor Hospital	Gen	29	20	Indep	No	R N	1904
Our Lady of Victory Hosp ▲	Gen	110	61	Church	Yes[1]	R N	1921
Lake Kushaqua 10—Franklin							
Stony Wold Sanatorium	TB	111	111	Indep	No	M D	1901
Lake Ronkonkoma 49—Suffolk							
Gary de Vabre Academy	Conv	12	12	Part	No	Lay	1905
Liberty 3 075—Sullivan							
Maimonides Hospital	Gen	24	18	Frat	No	M D	1926
O'Donnell Nursing Cottage	TB	20	15	Indiv	No	Lay	1917
Workmen's Circle Sanat +	TB	100	75	Frat	No	M D	1910
Little Falls 12 4[illegible]8—Herkimer							
Little Falls Hospital	Gen	54	24	Indep	Yes[1]	R N	1894
Livingston 249—Columbia							
Potts Memorial Hospital	TB	40	35	Indep	No	M D	1926
Lockport 21 676—Niagara							
Lockport City Hospital	Gen	63	58	City	No	R N	190[illegible]
Niagara County Sanatorium	TB	14[illegible]	110	County	No	M D	1916
Odd Fellows Home Association of the State of N Y[2]	Gen	30	30	Frat	No	Lay	1922
Long Beach 2 891—Nassau							
Long Beach Hospital	Gen	28	New	Indep	No	M D	1927
Long Island City (pop incl in New York City)—Queens							
Astoria Sanatorium	Gen	30	20	Indiv	No	M D	1925
River Crest Sanitarium	N&M	132	112	Indep	No	M D	1898
St John's Long Island City Hospital ★▲	Gen	210	151	Church	Yes[1]	Lay	1891
Loomis 200—Sullivan							
Loomis Sanatorium +	TB	225	208	Indep	No	M D	1895
Sunnyside Farm	TB Chil	25	25	Indep	No	Lay	1913
Lyons 4 275—Wayne							
Edward J Barber Hospital	Gen	16	10	Indiv	No	M D	1914
Fowlerton Simpson Hospital	Gen	18	8	Part	No	M D	1923
Machias 627—Cattaraugus							
Cattaraugus County Hosp	Gen	3[illegible]	35	County	No	Lay	1868
Malone 8 820—Franklin							
Alice Hyde Memorial Hosp ▲	Gen	40	29	Indep	Yes[1]	R N	1913
Mamaroneck 10 1[illegible]3—Westchester							
Humphries Hospital	N&M	21	18	Indep	No	M D	1921
Waldemere	N&M	21	18	Indiv	No	M D	1889
Marcy 112—Oneida							
Camp Healthmore	TB	40	36	City	No	R N	1909
Medford Station 259—Suffolk							
Medford Tuberculosis Sanatorium[3]	TB	[illegible]	30	Indep	No	Lay	
Medina 6 237—Orleans							
Medina Memorial Hospital	Gen	28	14	Indep	Yes	R N	1908
Middle Grove 260—Saratoga							
Saratoga County Tuberculosis Hospital	TB	55	55	County	No	M D	1914
Middletown 20 412—Orange							
Middletown Sanitarium	Gen	50	30	Indiv	No	M D	1905
Middletown State Homeopathic Hospital	Ment	2 [illegible]13	2 853	State	Yes[1]	M D	1874
Thrall Hospital	Gen	[illegible]	28	Indiv	No	R N	1887
Millgrove 110—Erie							
Erie County Home and Infirmary ★▲[2]	Gen	500	280	County	No	M D	1874
Erie County Penitentiary Hospital[2]	Gen	20	8	County	No	M D	1924
Mineola 5 240—Nassau							
Nassau Hospital ★▲	Gen	17[illegible]	103	Indep	Yes[1]	R N	1896
Mineville 1 844—Essex							
Mineville Hospital	Indus	15	8	Indus	No	M D	1914
Mohegan Lake 105—Westchester							
Josephine Home	Chil Conv	50	50	Indiv	No	R N	1923
Monticello 3 529—Sullivan							
Monticello Hospital	Gen	25	14	Indep	No	Lay	1924
Montour Falls 1 561—Schuyler							
Shepard Relief Hospital	Gen	12	8	County	No	R N	1921
Mt Kisco 4 161—Westchester							
Northern Westchester Hosp	Gen	55	40	Indep	No	R N	1916
Mt McGregor — Saratoga							
Metropolitan Life Insurance Company Sanatorium +	Gen TB	[illegible]90	245	Indep	No	M D	1913
Mt Vernon 51 900—Westchester							
Bikur Cholim Convalescent Home	Conv	23	23	Indep	No	Lay	1919
Mt Vernon Hospital ★▲	Gen	118	78	Indep	Yes[1]	R N	1890
Mt Vision 258—Otsego							
Otsego County Sanat	TB	26	22	County	No	M D	1918
Napanoch 633—Ulster							
Institution for Defective Delinquents	DefChil	85	12	State	No	M D	1921
Newark 7 305—Wayne							
Newark Hospital	Gen	18	8	Indiv	No	M D	1921
Newark State School for Mental Defectives	DefChil	1 100	1 000	State	No	M D	18[illegible]
Newburgh 30 419—Orange							
Estelle and Walter C Odell Memorial Sanatorium for Tuberculous	TB	48	42	County	No	M D	1909
Newburgh City and Town Home[3]	Gen	20	18	City	No	Lay	18[illegible]3
St Luke's Hospital ▲	Gen	114	84	Indep	Yes[1]	Lay	1871
New Hartford 1 699—Oneida							
Children's Hospital Home of Utica	Ortho	22	21	Cy&Co	No	R N	18[illegible]0
New Rochelle 45 800—Westchester							
New Rochelle Hospital ★▲	Gen	130	97	Indep	Yes[1]	Lay	1892
New York City 5 924 000—New York							
Accident & Emergency Hospital and Sanatorium	Indus	14	6	Indiv	No	M D	1917
Babies Hospital of the City of New York +▲	Chil	80	68	Indep	No	R N	18[illegible]7
Beekman Street Hospital ▲	Gen	100	65	Indep	No	R N	1905
Bellevue Hospital ★+▲	Gen	2 001	1 551	City	Yes[1]	M D	1816
Bellevue Settlement House	TB	22	20	Indep	No	R N	1911
Beth Abraham Hospital for Incurables	Incur	225	152	Church	No	M D	1920
Beth David Hospital ▲	Gen	102	90	Indep	Yes	M D	18[illegible]6
Beth Israel Hospital ★+▲	Gen	137	112	Indep	Yes[1]	Lay	1890
Booth Memorial Hospital	Gen	51	30	Church	Yes	R N	1927
Branch New York City Reformatory[2]	Gen TB	60	50	City	No	Lay	1905
Broad Street Hospital	Gen	113	74	Indep	No	Lay	1917
Bronx Eye & Ear Infirmary	EENT	30	20	Indep	No	R N	1901
Bronx Maternity Hospital	Mater	30	22	Indep	No	Lay	1912
Bronx Hospital and Disp ▲	Gen	88	80	Indep	No	Lay	1911

NEW YORK—Cont

City Pop —County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt M D R N Lay	Year Est
Caledonian Hospital of the City of New York[3]	Gen	25	20	Indep	Yes	R N	1909
Carson C Peck Memorial Hospital▲	Gen	90	85	Indep	Yes[1]	Lay	1919
Coney Island Hospital▲	Gen	144	95	City	No	M D	1910
Cumberland Hospital ★▲	Gen	450	312	City	Yes[1]	M.D	1852
DeLim Sanitarium	Mater	8	7	Indep	No	M D	1918
Evangelical Deaconess Hosp	Gen	18	10	Indep	No	Lay	1923
Faith Home for Incurables	Incur	70	65	Indiv	No	Lay	1875
Flatbush Sanitarium	Gen	13	8	Indiv	No	M D	1915
Greenpoint Hospital★▲	Gen	230	142	City	No	M D	1912
Hamilton Private Hospital	Gen	25	18	Indiv	No	Lay	1910
Harbor Hospital	Gen	55	34	Indep	No	R N	1914
Hospital of the Holy Family ★▲	Gen	110	85	Church	Yes[1]	R N	1909
House of St Giles the Cripple▲	Orth	45	34	Church	No	Lay	1891
Jewish Hospital of Brooklyn ★+▲	Gen	293	284	Indep	Yes[1]	M D	1906
Kings County Hospital★▲	Gen	1 809	1 450	City	Yes[1]	M D	1832
Kingston Avenue Hospital▲	Iso	410	241	City	No	M D	1889
Knorr Sanitarium	Mater	16	12	Indiv	No	R N	1912
Long Island College Hospital★+▲	Gen	440	366	Indep	Yes[1]	Lay	1858
Lutheran Hospital	Gen	36	30	Church	No	R.N	1881
Methodist Episcopal Church Home	Gen	10	10	Church	No	Lay	1883
Methodist Episcopal Hospital ★▲	Gen	375	241	Church	Yes[1]	Lay	1881
Midwood Sanitarium	Gen	34	30	Indep	No	R N	1907
Norwegian Lutheran Deaconess Home and Hospital★▲	Gen	167	161	Church	Yes[1]	Lay	1883
Orphan Asylum Society of the City of Brooklyn	Chil	19	5	Indep	No	Lay	1833
Prospect Heights Hospital and Brooklyn Maternity▲	Gen	109	76	Indep	Yes[1]	Lay	1871
Ridgewood Sanitarium	Gen	15	12	Indep	No	R N	1914
Riverdale Hospital	Gen	50	25	Indiv	No	Lay	1926
St Catherine s Hospital ★▲	Gen	259	235	Church	Yes[1]	R N	1870
St Cecelia Maternity Hospital	Mater	56	New	Church	No	Lay	1927
St John s Hospital ★▲	Gen	100(a)	73	Church	Yes[1]	Lay	1851
St Mary s Hospital of the City of Brooklyn★▲	Gen	253	180	Church	Yes[1]	R N	1879
St Peter s Hospital★▲	Gen	250	200	Church	Yes	Lay	1834
St Phebe s Mission and Convalescent Home	Conv	16	10	Indep	No	Lay	1886
Samaritan Hospital of Brooklyn	Gen	51	45	Church	No	R N	1904
Shore Road Hospital	Gen	60	40	Indep	No	R N	1925
Station Hospital	Gen	58	20	Army	No	M D	1836
Swedish Hospital▲	Gen	64	58	Church	Yes[1]	R N	1896
United Israel Zion Hosp ★▲	Gen	205	175	Indep	No	Lay	1922
United States Naval Hosp ★▲	Gen	853	305	Navy	No	M D	1824
Unity Hospital	Gen	259	104	Indep	No	Lay	1915
Dr Wade s Private Hosp	Gen	40	35	Indiv	Yes	M D	1918
Williamsburgh Maternity	Mater	75	43	Indep	No	M D	1918
Wyckoff Heights Hospital of Brooklyn★▲	Gen	160	148	Indep	Yes[1]	Lay	1899
Buffalo 544 300—Erie							
Buffalo City Hospital★+▲	Gen	825	771	City	Yes[1]	M D	1917
Buffalo Columbus Hosp▲	Gen	73	57	Indep	Yes	M D	1908
Buffalo General Hosp★+▲	Gen	376	281	Indep	Yes[1]	M D	1855
Buffalo Hospital of the Sisters of Charity★▲	Gen	215	129	Church	Yes[1]	R.N	1849
Buffalo State Hospital	N&M	2 214	2,200	State	Yes[1]	M D	1880
Charity Eye Ear and Throat Hospital of Erie County	EENT	9	4	County	No	R N	1891
Children s Hospital of Buffalo +▲	Chil	124	101	Indep	Yes[1]	R N	1892
Deaconess Hospital★▲	Gen	173	135	Indep	Yes[1]	R.N	1896
Emergency Hospital of the Sisters of Charity ★▲	Gen	100	85	Church	Yes	R N	1902
German Roman Catholic Orphan Asylum	Chil	24	10	Church	No	Lay	1861
Lafayette General Hospital	Gen	50	27	Indep	Yes	R.N	1910
Memorial Hospital of Buffalo	Gen	55	30	Indep	No	Lay	1901
Mercy Hospital[3]	Gen	28	21	Church	No	Lay	1904
Millard Fillmore Hospital★	Gen	130	128	Indep	Yes[1]	Lay	1872
Parkside Sanitarium	N&M	40	30	Indiv	No	M D	1902
Providence Retreat	N&M	180	132	Church	No	R N	1860
St Mary s Hospital▲	Mater	76	50	Church	Yes	R N	1852
Salvation Army Maternity Hospital	Mater	9	5	Church	No	R N	1900
State Institute for the Study of Malignant Disease	Sk&Ca	25	12	State	No	M D	1898
United States Marine Hospital No 3 ▲	Gen	71	71	USPHS	No	M D	1873
Cambridge 1 626—Washington							
Mary McClellan Hospital▲	Gen	50	38	Indep	Yes[1]	R N	1919
Camden 2 105—Oneida							
Healthforte — Dr Bell s Private Rest Home	N&M	15	9	Indiv	No	M D	1926
Canandaigua 7 356—Ontario							
Brigham Hall Hospital	N&M	70	51	Indep	No	M D	1859
Canandaigua Health Home	Conv	21	19	Indiv	No	M D	1912
Frederick Ferris Thompson Hospital▲	Gen	95	65	Indep	Yes[1]	R N	1903
Canastota 4,223—Madison							
Canastota Memorial Hospital	Gen	13	8	City	No	Lay	1912
Cassadaga 495—Chautauqua							
Newton Memorial Hospital	TB	100	86	County	No	M.D	1920
Castile 1 013—Wyoming							
Greene Sanitarium	Conv	75	45	Indiv	No	M D	1819
Castle Point 23—Dutches							
United States Veterans Hospital No 98 ▲	TB	400	389	VetBur	No	M D	1924
Central Islip 675—Suffolk							
Central Islip State Hospital	N&M	6 360	5 931	State	Yes[1]	M D	1889
Central Valley 800—Orange							
Dr MacDonald s House	N&M	30	30	Part	No	M D	1889
Chappaqua 733—Westchester							
Elizabeth Milbank Anderson *Home for Convalescent* Children	Conv	175	175	Indep	No	M D	1908
Chenango Bridge 360—Broome							
Broome County Tuberculosis Hospital	TB	78	56	County	No	M D	1919
Churchville 622—Monroe							
Convalescent Home of Rochester	Conv	12	7	Indep	No	R N	1916
Clifton Springs 1776—Ontario							
Clifton Springs Sanitarium and Clinic★+▲	Gen	439	314	Indep	Yes[1]	M D	1850
Cold Spring 1 494—Putnam							
Julia L Butterfield Memorial Hospital	Gen	23	12	Indep	No	R N	1924
Loretto Rest	Conv	15	7	Church	No	Lay	1921
Cohoes 23 315—Albany							
Cohoes Hospital▲	Gen	55	38	Indep	Yes[1]	R.N	1898
Cooperstown 2 752—Otsego							
Otsego County Home	Gen	14	10	County	No	Lay	
Mary Imogene Bassett Hospital	Gen	90	65	Indep	No	M D	1921
Susan Fenimore Cooper Foundation	Chil	8	1	Church	No	M D	1870
Corning 15 722—Steuben							
Corning Hospital	Gen	85	37	Indep	Yes[1]	R N	1900
Corona —— Queens							
Dr Coombes Sanitarium	N&M	66	57	Indep	No	M D	1909
Cortland 13 879—Cortland							
Cortland County Hospital	Gen	68	66	Indep	Yes[1]	R N	1891
Cortland Sanitarium	Conv	14	12	Indiv	No	M D	1914
Creedmoor —— Queens							
Creedmoor Division Brooklyn State Hospital	N&M	726	623	State	No	M D	1912
Cuba 1 611—Allegany							
Cuba Memorial Hospital	Gen	15	5	Indep	No	R N	1925
Dannemora 2 955—Clinton							
Clinton Prison General & TB Hospital°	GenTB	254	206	State	No	Lay	1845
Dannemora State Hospital	N&M	558	500	State	No	M D	1900
Dansville 4 569—Livingston							
Dansville General Hospital	Gen	22	20	Indep	Yes	R N	1920
Jackson Memorial Hospital	Gen	160	50	Indep	No	M D	1923
Delhi 1 775—Delaware							
Delaware County Tuberculosis Sanatorium	TB	28	14	County	No	M D	1920
Dewittville 153—Chautauqua							
Chautauqua County Almshouse and Hospital	Gen	106	100	County	No	Lay	1830
Dobbs Ferry 5 020—Westchester							
Dobbs Ferry Hospital▲	Gen	50	18	Indep	No	R N	1895
Dunkirk 19 912—Chautauqua							
Brook s Memorial Hospital	Gen	60	35	Indep	No	R N	1899
Eastview 161—Westchester							
Solomon and Betty Loeb Memorial Home for Convalescents	Conv	108	106	Indep	No	R.N	1904
Elmira 48 359—Chemung							
Arnot Ogden Memorial Hospital★▲	Gen	100	94	Indep	Yes[1]	R.N	1882
Chemung Sanatorium	TB	35	28	County	No	M D	1918
Federation Farm	TB	22	22	Indep	No	Lay	1917
Gleason Health Resort	Conv	40	25	Indiv	No	M D	1852
New York State Reformatory°	Gen	83	31	State	No	M D	1876
O Connor s Private Hospital	Conv	9	3	Indiv	No	R.N	1909
St Joseph s Hospital▲	Gen	150	115	Church	Yes[1]	Lay	1908
Endicott 15 627—Broome							
Ideal Hospital of Endicott	Gen	53	30	City	No	R.N	1927
Farmingdale 2 091—Nassau							
Nassau County Sanatorium	TB	181	118	County	No	M D	1918
Far Rockaway, —— Queens							
Jacob D Posner—Brooklyn Jewish Home for Convalescents	Conv	75	18	Indep	No	R.N	1921
Natalie and Louis Heinsheimer Memorial Home	TB	56	32	Indep	No	R N	1923
St Joseph s Hospital[3]	Gen	102	85	Church	Yes[1]	Lay	1905
Seaside Hospital	Card	35	32	Indep	No	R N	1900
Wave Crest Convalescent Home	Conv	60	35	Indep	No	R N	1920
Fayetteville 1 813—Onondaga							
Camp Hillcrest	TB	54	51	Indep	No	R N	1919
Fishers Island 324—Suffolk							
Station Hospital	Gen	50	7	Army	No	M D	1901
Flushing — Queens							
Flushing Hospital and Dispensary ★▲	Gen	130	106	Indep	Yes[1]	Lay	1882
Station Hospital	Gen	80	48	Army	No	M D	1862
Ft Niagara — Niagara							
Station Hospital	Gen	15	9	Army	No	M D	1869
Ft Slocum — Westchester							
Station Hospital	Gen	125	55	Army	No	M D	1896
Ft Wadsworth — Richmond							
Station Hospital	Gen	14	10	Army	No	M D	1863
Freeville 484—Tompkins							
George Junior Republic Association Hospital[3]	Gen	15	8	Indep	No	Lay	1895
Fulton 12 571—Oswego							
Albert Lindley Lee Memorial Hospital	Gen	54	22	City	Yes	R.N	1910

NEW YORK—Cont City Pop.—County	Type of Service	Beds	Aver. Pts.	Control	Nu. Tr. Sch.	Supt. M.D. R.N. Lay	Year Est.
Gabriels [illegible]—Franklin							
Sanatorium Gabriels	TB	140	[illegible]	Church	No	Lay	1897
Garden City [illegible]—Nassau							
Station Hospital	Gen		9	Army	No	M D	1918
Geneva [illegible]—Ontario							
Geneva General Hospital	Gen	[illegible]	[illegible]	Indep	Yes¹	M D	[illegible]
Glen Cove [illegible]—Nassau							
North Country Community Hospital	Gen	110	[illegible]	Indep	No	R N	[illegible]
Park Side Hospital	Gen	10	8	Part	No	R N	[illegible]
Glens Falls [illegible]—Warren							
Glens Falls Hospital ▲	Gen	7	[illegible]	Indep	Yes¹	Lay	[illegible]
Westmont Sanatorium	TB		New	County	No	M D	
Gloversville [illegible]—Fulton							
Nathan Littauer Hospital ▲	Gen	110	[illegible]	Indep	Yes¹	Lay	[illegible]
Summit View Sanatorium	TB	2	10	County	No	M D	[illegible]
Goshen [illegible]—Orange							
Goshen Emergency Hospital	Gen	17	13	Indep	No	R N	1908
Interpines	N&M	[illegible]		Indiv	No	M D	[illegible]
Dr L J Kiernan's Health Farm	M&Dr	[illegible]	6	Indiv	No	M D	[illegible]
Orange County Almshouse Hospital	Gen	[illegible]	1	County	No	Lay	[illegible]
Governors Island — New York							
Station Hospital	Gen	[illegible]	3	Army	No	M D	[illegible]
Greenport [illegible]—Suffolk							
Eastern Long Island Hosp	Gen		14	Indep	No	R N	[illegible]
Green Ridge — Richmond							
St Michael's Home for Destitute Children ²	Gen	[illegible]	6	Church	No	Lay	[illegible]
Harmon-on-Hudson 110—Westchester							
Crichton House	N&M	[illegible]	1	Indiv	No	M D	[illegible]
Harrison [illegible]—Westchester							
[illegible] Brook House	N&M	[illegible]	[illegible]	Indiv	No	M D	[illegible]
Miriam Osborn Memorial Home	Gen	[illegible]	18	Indep	No	Lay	[illegible]
St Vincent's Retreat	N&M	[illegible]	[illegible]	Church	No	Lay	[illegible]
Hastings Upon Hudson [illegible]—Westchester							
Hastings Hillside Hospital	N&M	40	New	Indep	No	M D	[illegible]
Helmuth — Erie							
Gowanda State Homeopathic Hospital	N&M	[illegible]	[illegible]	State	Yes¹	M D	[illegible]
Hempstead [illegible]—Nassau							
Mercy Hospital	Gen	18	[illegible]	Church	No	Lay	[illegible]
Herkimer 10,910—Herkimer							
Herkimer County Hospital	Gen	[illegible]	10	County	No	Lay	[illegible]
Herkimer Memorial Hosp	Gen	[illegible]	18	Indep	No	R N	[illegible]
Holcomb [illegible]—Ontario							
Oak Mount Sanatorium	TB	[illegible]	44	County	No	M D	[illegible]
Holtsville [illegible]—Suffolk							
Suffolk Sanatorium	TB	[illegible]	[illegible]	County	No	M D	[illegible]
Hornell [illegible]—Steuben							
Bethesda Hospital ▲	Gen	[illegible]	40	Indep	Yes	R N	[illegible]
St James Mercy Hosp ▲	Gen	[illegible]	40	Church	Yes	Lay	[illegible]
Hudson [illegible]—Columbia							
Hudson City Hospital ▲	Gen	[illegible]	[illegible]	Cy&Co	Yes¹	R N	[illegible]
Hudson Orphan and Relief Association	Chil	10	[illegible]	Indep	No	Lay	[illegible]
New York State Training School for Girls	Gen	40		State	No	M D	[illegible]
Huntington 6,200—Suffolk							
Huntington Hospital	Gen	[illegible]	20	Indep	No	R N	[illegible]
Ilion [illegible]—Herkimer							
Ilion Hospital	Gen	[illegible]	17	Indep	No	R N	[illegible]
Industry — Monroe							
State Agricultural and Industrial School ³	Gen	[illegible]	[illegible]	State	No	M D	[illegible]
Iroquois — Erie							
Thomas Indian School	Gen	14	3	State	No	Lay	[illegible]
Irvington [illegible]—Westchester							
Irvington House	Card	[illegible]	[illegible]	Indep	No	R N	[illegible]
Ithaca [illegible]—Tompkins							
Cayuga Preventorium	TB	40	[illegible]	Indep	No	R N	1911
Ithaca Memorial Hospital	Gen	[illegible]	[illegible]	Indep	Yes¹	R N	[illegible]
Jamaica (population included in New York City)—Queens							
Chapin Home for the Aged and Infirm ²	Gen	17	5	City	No	Lay	[illegible]
Hillside Sanitarium	Gen	[illegible]	17	Indiv	No	Lay	[illegible]
Mary Immaculate Hosp ▲	Gen	80	[illegible]	Church	Yes¹	R N	1902
Queensboro Hospital ▲	Iso	74	13	City	No	M D	1910
Jamestown 43,414—Chautauqua							
Jamestown General Hosp ▲	Gen	80	78	City	Yes¹	R N	1911
Woman's Christian Association Hospital ▲	Gen	[illegible]	47	Indep	Yes¹	R N	[illegible]
Johnson City [illegible]—Broome							
Charles S Wilson Memorial Hospital	Gen	[illegible]	125	Indep	Yes¹	R N	[illegible]
Katonah 1,400—Westchester							
Hillbourne Farms	Nerv	13	10	Indep	No	M D	1901
Kings Park [illegible]—Suffolk							
Kings Park State Hospital	N&M	5 210	5 005	State	Yes¹	M D	[illegible]
Kingston 28,000—Ulster							
Kingston Hospital ▲	Gen	76	[illegible]	Indep	Yes¹	R N	[illegible]
Our Lady of Victory Sanit ▲	Gen	90	54	Church	Yes¹	R N	1902
Dr C O Sahler Sanitarium	N&M	[illegible]	50	Indep	No	Lay	[illegible]
Ulster County Tuberculosis Hospital	TB	22	20	County	No	M D	1909
Lackawanna [illegible]—Erie							
Moses Taylor Hospital	Gen	29	20	Indep	No	R N	[illegible]
Our Lady of Victory Hosp ▲	Gen	110	61	Church	Yes¹	R N	[illegible]
Lake Kushaqua 10—Franklin							
Stony Wold Sanatorium	TB	111	111	Indep	No	M D	1901
Lake Ronkonkoma 49—Suffolk							
Gary de Vabre Academy	Conv	12	12	Part	No	Lay	[illegible]
Liberty [illegible]—Sullivan							
Maimonides Hospital	Gen	21	18	Frat	No	M D	[illegible]
O'Donnell Nursing Cottage	TB	20	15	Indiv	No	Lay	1917
Workmen's Circle Sanat +	TB	100	75	Frat	No	M D	1910
Little Falls [illegible]—Herkimer							
Little Falls Hospital	Gen	[illegible]	24	Indep	Yes¹	R N	[illegible]
Livingston 210—Columbia							
Potts Memorial Hospital	TB	40	[illegible]	Indep	No	M D	[illegible]
Lockport [illegible]—Niagara							
Lockport City Hospital	Gen	[illegible]	[illegible]	City	No	R N	[illegible]
Niagara County Sanatorium	TB	[illegible]	110	County	No	M D	[illegible]
Odd Fellows Home Association of the State of N Y	Gen	[illegible]	[illegible]	Frat	No	Lay	1922
Long Beach [illegible]—Nassau							
Long Beach Hospital	Gen	28	New	Indep	No	M D	[illegible]
Long Island City (pop incl in New York City)—Queens							
Astoria Sanatorium	Gen	30	[illegible]	Indiv	No	M D	[illegible]
River Crest Sanitarium	N&M	[illegible]	112	Indep	No	M D	[illegible]
St John's Long Island City Hospital ★▲	Gen	210	[illegible]	Church	Yes¹	Lay	[illegible]
Loomis [illegible]—Sullivan							
Loomis Sanatorium +	TB	[illegible]	208	Indep	No	M D	[illegible]
Sunnyside Farm	TB Chil	[illegible]	25	Indep	No	Lay	[illegible]
Lyons [illegible]—Wayne							
Edward J Barber Hospital	Gen	16	10	Indiv	No	M D	1914
[illegible] Simpson Hospital	Gen	18	8	Part	No	M D	1922
Machias [illegible]—Cattaraugus							
Cattaraugus County Hosp	Gen	[illegible]	[illegible]	County	No	Lay	[illegible]
Malone [illegible]—Franklin							
Alice Hyde Memorial Hosp ▲	Gen	40	[illegible]	Indep	Yes¹	R N	1913
Mamaroneck [illegible]—Westchester							
Humphries Hospital	N&M	21	18	Indep	No	M D	1921
Waldemere	N&M	21	18	Indiv	No	M D	[illegible]
Marcy [illegible]—Oneida							
Camp Healthmore	TB	46	[illegible]	City	No	R N	[illegible]
Medford Station [illegible]—Suffolk							
Medford Tuberculosis Sanatorium ³	TB	[illegible]	30	Indep	No	Lay	
Medina [illegible]—Orleans							
Medina Memorial Hospital	Gen	[illegible]	14	Indep	Yes	R N	1908
Middle Grove 200—Saratoga							
Saratoga County Tuberculosis Hospital	TB	[illegible]	[illegible]	County	No	M D	1914
Middletown [illegible]—Orange							
Middletown Sanitarium	Gen	[illegible]	[illegible]	Indiv	No	M D	[illegible]
Middletown State Homeopathic Hospital	Ment	[illegible]	[illegible]	State	Yes¹	M D	1874
Thrall Hospital	Gen	[illegible]	28	Indiv	No	R N	[illegible]
Millgrove 110—Erie							
Erie County Home and Infirmary ★▲ ²	Gen	[illegible]	[illegible]	County	No	M D	[illegible]
Erie County Penitentiary Hospital ²	Gen	20	8	County	No	M D	1924
Mineola [illegible]—Nassau							
Nassau Hospital ★▲	Gen	[illegible]	103	Indep	Yes¹	R N	[illegible]
Mineville [illegible]—Essex							
Mineville Hospital	Indus	[illegible]	5	Indus	No	M D	1914
Mohegan Lake [illegible]—Westchester							
Josephine Home	Chil Conv	[illegible]	50	Indiv	No	R N	1923
Monticello 3,529—Sullivan							
Monticello Hospital	Gen	[illegible]	14	Indep	No	Lay	[illegible]
Montour Falls [illegible]—Schuyler							
Shepard Relief Hospital	Gen	12	8	County	No	R N	[illegible]
Mt Kisco [illegible]—Westchester							
Northern Westchester Hosp	Gen	65	40	Indep	No	R N	[illegible]
Mt McGregor — Saratoga							
Metropolitan Life Insurance Company Sanatorium +	Gen TB	[illegible]	[illegible]	Indep	No	M D	[illegible]
Mt Vernon [illegible]—Westchester							
Bikur Cholim Convalescent Home	Conv	[illegible]	23	Indep	No	Lay	1919
Mt Vernon Hospital ★▲	Gen	118	78	Indep	Yes¹	R N	[illegible]
Mt Vision [illegible]—Otsego							
Otsego County Sanat	TB	26	22	County	No	M D	1918
Napanoch [illegible]—Ulster							
Institution for Defective Delinquents	Def Chil	[illegible]	12	State	No	M D	1921
Newark [illegible]—Wayne							
Newark Hospital	Gen	[illegible]	8	Indiv	No	M D	[illegible]
Newark State School for Mental Defectives	Def Chil	1 100	1 000	State	No	M D	[illegible]
Newburgh 30,419—Orange							
Estelle and Walter C Odell Memorial Sanatorium for Tuberculous	TB	48	42	County	No	M D	1909
Newburgh City and Town Home ² ³	Gen	20	18	City	No	Lay	[illegible]
St Luke's Hospital ▲	Gen	114	84	Indep	Yes¹	Lay	[illegible]
New Hartford 1,099—Oneida							
Children's Hospital Home of Utica	Ortho	[illegible]	21	Cy&Co	No	R N	[illegible]
New Rochelle [illegible]—Westchester							
New Rochelle Hospital ★▲	Gen	[illegible]	97	Indep	Yes¹	Lay	1892
New York City [illegible]—New York							
Accident & Emergency Hospital and Sanatorium	Indus	14	6	Indiv	No	M D	[illegible]
Babies Hospital of the City of New York +▲	Chil	80	68	Indep	No	R N	[illegible]
Beekman Street Hospital ▲	Gen	100	[illegible]	Indep	No	R N	[illegible]
Bellevue Hospital ★+▲	Gen	2 001	[illegible]	City	Yes¹	M D	[illegible]
Bellevue Settlement House	TB	22	20	Indep	No	R N	[illegible]
Beth Abraham Hospital for Incurables	Incur	[illegible]	[illegible]	Church	No	M D	[illegible]
Beth David Hospital ▲	[illegible]			[illegible]	Yes	M D	[illegible]
Beth Israel [illegible]				[illegible]		[illegible]	[illegible]
Booth Memorial Hospital							[illegible]
Branch New York City Reformatory ²						Lay	[illegible]
Broad Street Hospital							
Bronx Eye & Ear Infirmary							
Bronx Maternity Hosp							
Bronx Hospital							

NEW YORK—Cont City Pop—County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt M D R N Lay	Year Est
Bronx Sanitarium	Gen	15	8	Indep	No	R N	1907
Central Park West and Towns Hospitals	Gen	50	32	Indiv	No	M D	1901
Colored Orphan Asylum [2]	Chil	20	10	Indep	No	M D	1855
Columbus Hospital ▲	Gen	100	54	Church	No	Lay	1892
Columbus Hosp Extension ▲	Gen	98	70	Church	No	Lay	1920
Community Hospital in the City of New York ▲	Gen	91	56	Indep	No	R N	1919
Concourse Sanitarium	Gen	45	32	Indep	No	M D	1923
Correction Hospital	Gen	250	200	City	No	Lay	
Crotona Park Sanitarium	Gen	32	25	Indep	No	Lay	
Druskin Hospital	Gen	20	15	Indiv	No	Lay	1925
Echo Hill Sanitarium	Gen	18	10	Part	No	M.D	1924
Esther Neumann Gelber Memorial Hospital	EENT	26	10	Indiv	No	M D	1915
Fifth Avenue Hospital of the City of New York ★+▲	Gen	257	203	Indep	Yes[1]	M D	1920
Fifty West Seventy Fourth Street Sanitarium	Gen	32	28	Indiv	No	R N	
Floating Hospital	Chil	32	23	Indep	No	Lay	1866
Fordham Hospital ★▲	Gen	326	285	City	No	Lay	1892
French Hospital ★▲	Gen	106	100	Frat	Yes[1]	Lay	1809
Gouverneur Hospital ★▲	Gen	188	121	City	No	R N	1885
Harlem Eye and Ear Hosp +	EENT	50	20	Indep	No	M D	1881
Harlem Hospital ★+▲	Gen	206	190	City	Yes[1]	M D	1887
Hebrew Convalescent Home	Conv	41	41	Indep	No	Lay	1918
Hebrew Orphan Asylum of the City of New York [2]	Chil	65	11	Indep	No	Lay	1822
Herman Knapp Memorial Eye Hospital +	Eye	50	20	Indep	No	R N	1869
Hill Sanatorium	*Gen*	40	20	*Indiv*	No	*Lay*	1910
Home for Aged and Infirm Hebrews	Gen	125	14	Indep	No	Lay	1870
Home for Hebrew Infants	Chil	40	30	Indep	No	R N	1895
Home for Incurables	Incur	310	294	Church	No	M D	1866
Hospital and House of Rest for Consumptives	TB	85	81	Indep	No	Lay	1869
Hosp for Joint Diseases +▲	Ortho	277	195	Indep	No	Lay	1906
Hospital of St Elizabeth of Hungary	Gen	48	42	Church	No	Lay	1870
House of Calvary	Sk&Ca	100	90	Church	No	Lay	1899
House of the Holy Comforter	Incur	100	66	Church	No	Lay	1880
Hunts Point Hospital	Gen	80	60	Indep	No	Lay	1922
Isabella Home [2]	Gen	90	71	Indep	No	Lay	1885
Italian Hospital of Borough of Manhattan	Gen	94	50	Indep	No	R N	1905
Jewish Home for Convalescents	Conv	125	60	Indep	No	Lay	1917
Jewish Maternity Hosp +▲	Mater	52	40	Indep	Yes	Lay	1906
Jewish Memorial Hospital ▲	Gen	105	84	Indep	Yes	Lay	1914
Dr Kellogg's House	N&M	7	2	Indiv	No	M D	1891
Knickerbocker Hospital ★▲	Gen	108	76	Indep	No	R.N	1862
Lebanon Hospital ★▲	Gen	162	109	Indep	Yes[1]	Lay	1890
Dr Leff's Maternity Hosp	Mater	51	35	Indiv	No	M D	1919
Lempert Hospital	EENT	10	6	Indiv	No	Lay	1923
Lenox Hill Hospital ★+▲	Gen	329	277	Indep	Yes[1]	Lay	1861
Lexington Hospital ▲	Gen	44	33	Indep	No	R N	1920
Lincoln Hosp and Home ★▲	Gen	311	291	City	Yes[1]	Lay	1839
Lutheran Hospital of Manhattan ▲	Gen	100	73	Church	No	Lay	1911
Lying-in Hospital of the City of New York	Mater	150	129	Indep	Yes	M D	1798
Madison Sanitarium	Gen	20	15	Indiv	No	M D	1920
Manhattan Eye Ear and Throat Hospital +▲	EENT	206	133	Indep	Yes	Lay	1869
Manhattan Maternity and Dispensary +▲	Mater	50	31	Indep	Yes	R N	1901
Manhattan State Hospital	Ment	6 665	6 576	State	Yes[1]	M D	1896
Memorial Hospital for the Treatment of Cancer and Allied Diseases +▲	Cancer	104	94	Indep	No	Lay	1884
Metropolitan Hospital ★+▲	Gen	1 312	1 134	City	Yes[1]	M D	1875
Midtown Hospital	Gen	38	17	Indep	No	M D	1893
Misericordia Hospital ▲	Gen	240	180	Church	Yes[1]	R.N	1887
Montefiore Hospital for Chronic Diseases +▲	Gen	588	584	Indep	Yes[1]	M D	1884
Mount Hope Private Hosp	Gen	16	10	Indiv	No	M D	1922
Mount Morris Park Sanit	Gen	65	60	Indiv	No	Lay	1924
Mt Sinai Hospital ★+▲	Gen	650	523	Indep	Yes[1]	M D	1852
Murray Hill Sanatorium	Gen	70	51	Indep	No	Lay	1894
Neurological Hospital +	Nerv	467	456	City	Yes	M.D	1913
Neurological Institute +▲	N&M	85	77	Indep	No	R N	1909
New York City Cancer Institute Hospital +	Cancer	200	131	City	Yes	M D	1923
New York City Children's Hospital	DefChil	1 688	1 496	City	No	M D	1847
New York City Hospital ★▲	Gen	1 023	855	City	Yes[1]	M D	1832
New York County Penitentiary	Gen	50	25	County	No	Lay	
New York Eye and Ear Infirmary +▲	EENT	175	125	Indep	No	Lay	1820
New York Foundling Hosp ▲	Chil	245	193	Church	Yes	Lay	1869
New York Homeopathic Medical College and Flower Hospital ★▲ [3]	Gen	189	147	Indep	Yes[1]	Lay	1830
New York Hospital ★+▲	Gen	316	233	Indep	Yes[1]	M D	1771
New York House of Refuge [2]	Gen	20	2	State	No	Lay	1824
New York Infirmary for Women and Children ★▲	Gen	150	85	Indep	No	R N	1853
New York Institution for the Instruction of the Deaf and Dumb [2]	Gen	100	15	Indep	No	Lay	1817
New York Nursery and Child's Hospital ★+▲	Chil	173	126	Indep	Yes	Lay	1823
New York Ophthalmic Hospital +▲	EENT	47	5	Indep	No	Lay	1852
New York Orthopaedic Dispensary and Hospital +▲	Ortho	132	88	Indep	No	Lay	1866
New York Polyclinic Medical School and Hospital ★▲	Gen	325	225	Indep	No	Lay	1881
New York Post Graduate Med School and Hosp ★+▲	Gen	417	319	Indep	Yes[1]	M.D	1882
New York Skin and Cancer Hospital +▲	Gen	100	51	Indep	No	R N	1882
New York Society for the Relief of the Ruptured and Crippled +▲	Ortho	256	210	Indep	No	Lay	1863
Pan American Hospital	Gen	128	18	Indep	No	Ph G	1927
Park View Hospital	Gen	58	42	Indiv	No	M D	1920
Park West Hospital	Gen	64	45	Indep	No	M D	1926
Peoples Hospital	Gen	55	51	Indep	No	M D	1906
Pistany Mud Institute	Conv	8	6	Indiv	No	Lay	1925
Plaza Hospital	Gen	30	20	Indiv	No	M D	1921
Presbyterian Hospital in the City of New York ★+▲	Gen	256	221	Church	Yes[1]	Lay	1868
Reconstruction Hospital ▲	Gen	63	35	Indep	No	M D	1894
Rehabilitation Institute and General Hospital	Gen	33		Indep	No	R N	1872
Riverside Hospital ▲	Iso	828	559	City	No	M D	1885
Rockefeller Institute for Medical Research ▲	Gen	60	34	Indep	No	Lay	1901
Dr Rogers Hospital	N&M	25	16	Part	No	M D	1923
Roosevelt Hospital ★▲	Gen	377	259	Indiv	Yes[1]	Lay	1861
St Andrew's Convalescent Hospital	Conv	32	16	Church	No	M D	1886
St Francis Hospital ★▲	Gen	450	293	Church	No	Lay	1856
St Joseph's Hospital for Consumptives	TB	415	350	Church	No	Lay	1882
St Luke's Hospital ★+▲	Gen	411	344	Church	Yes[1]	Lay	1850
St Mark's Hospital ★▲	Gen	200	124	Indep	Yes[1]	M D	1890
St Mary's Free Hospital for Children +▲	Chil	131	85	Church	Yes[1]	Lay	1870
St Rose's Free Home for Incurable Cancer	Cancer	89	75	Church	No	Lay	1899
St Vincent's Hospital of the City of New York ★▲	Gen	352	310	Church	Yes[1]	Lay	1849
Seton Hospital	TB	225	210	Church	No	Lay	1891
Sherman Square Hospital	Gen	37	25	Indep	No	R N	1910
Sloane Hosp for Women +▲	Gen	161	81	Indep	Yes	R N	1888
Society for the Relief of Half Orphans and Destitute Children	Chil	18	8	Indep	No	Lay	1835
Sydenham Hospital	Gen	156	111	Indep	No	M D	1892
Tonsil Hospital	Throat	35	30	Indep	No	R N	1921
Union Hospital of Bronx	Gen	55	44	Indep	No	R N	1910
United States Marine Hospital No 43 ★▲	Gen	450	333	USPHS	No	M D	1872
United States Veterans Hospital No 81 +▲	N&M	900	809	VetBur	No	M D	1922
West Hill	N&M	34	21	Part	No	M D	1905
Dr Wiley Wilson's Private Sanitarium	Gen	8	4	Indiv	No	M D	1925
Willard Parker Hospital +▲	Iso	610	37	City	Yes	M D	1885
Woman's Hospital in the State of New York +▲	Gen	205	152	Indep	Yes	Lay	1855
Dr Yasuna's Maternity Hospital	Mater	30	29	Indiv	No	M D	192
Niagara Falls 58 300—Niagara							
Mt St Mary's Hospital ▲	Gen	144	65	Church	Yes[1]	R.N	1907
Niagara Falls Memorial Hospital ▲	Gen	99	85	Indep	Yes[1]	Lay	1898
Niagara Falls Municipal Hospital	Iso	40	6	City	No	R.N	1903
North Tonawanda 17 700—Niagara							
De Graff Memorial Hosp	Gen	26	16	City	No	R N	1914
Norwich 8 345—Chenango							
Norwich Memorial Hospital	Gen	42	23	Indep	No	R N	1909
Nyack 4 917—Rockland							
Nyack Hospital	Gen	75	1	Indep	No	R N	1895
Ogdensburg 17 500—St Lawrence							
A Barton Hepburn Hospital [3]	Gen	158	120	Church	Yes[1]	Lay	1885
St Lawrence State Hosp	Ment	2 277	2 382	State	Yes[1]	M D	1888
Olean 21 400—Cattaraugus							
Mountain Clinic	Gen	35	31	Indiv	Yes	R N	1918
Olean General Hospital ▲	Gen	75	45	Indep	Yes[1]	R N	1898
Rocky Crest Sanatorium	TB	50	44	County	No	M D	1916
Oneida 10 700—Madison							
Broad Street Hospital ▲	Gen	52	40	Indep	Yes[1]	R N	1907
Oneida City Hospital	Gen	10	7	City	No	Lay	1899
Oneonta 12 200—Otsego							
Aurelia Osborn Fox Memorial Hospital ▲	Gen	50	37	Indep	No	R N	1901
Parshall Private Hospital	Gen	30	20	Indiv	No	R N	1919
Onondaga 260—Onondaga							
Onondaga County Hosp [2]	Gen	75	75	County	No	Lay	1827
Oriskany 916—Oneida							
Eastern Star Home and Infirmary	Gen	31	20	Frat	No	Lay	1908
Orwell 1 029—Oswego							
Ideal Rest Sanatorium and Hospital	TB Gen	100	16	Indiv	No	M D	1918
Ossining 12 769—Westchester							
Greenmont-on the Hudson	N&M	14	10	Indiv	No	M D	1880
Ossining Hospital ▲	Gen	54	37	Indep	No	R N	1887
Sing Sing Prison Hospital	Gen	75	45	State	No	M D	1825
Oswego 4 147—Oswego							
Oswego Hospital	Gen	70	28	Indep	No	Lay	1881
Station Hospital	Gen	15	10	Army	No	M D	1864
Otisville, 833—Orange							
Dr Cahill's Private Sanitarium	TB	20	14	Indiv	No	M D	1921
Municipal Sanatorium of the Department of Health ▲	TB	532	463	City	No	M D	1906
Owego 4 147—Tioga							
Glenmary Sanitarium	N&M	15	10	Indep	No	M D	1889
Oxford 1 695—Chenango							
New York State Women's Relief Corps Home	Gen	55	55	State	No	Lay	1894

NEW YORK—Cont City Pop—County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt M D R.N Lay	Year Est
Patchogue 5 116—Suffolk							
Patchogue Hospital	Gen	15	7	Indiv	No	R N	1923
Pawling 1 009—Duchess							
White Oak Farm	N&M	12	12	Indiv	No	M D	1913
Peekskill 17 993—Westchester							
Noyes Memorial Home	Chil Conv	30	23	Church	No	M D	1888
Peekskill Hospital	Gen	65	30	Indep	No	R N	1880
Pelham Manor 3 338—Westchester							
Pelham Home for Children	Conv	30	27	Indep	No	R.N	1883
Pen Yan 5 236—Yates							
Soldiers and Sailors Memorial Hospital▲	Gen	41	30	Indep	No	R N	1916
Perrysburg 325—Cattaraugus							
J N Adam Memorial Hospital+	TB	500	475	City	No	M D	1912
Philmont 1 956—Columbia							
Columbia Sanatorium	TB	48	48	County	No	M D	1920
Plattsburg 11 700—Clinton							
Champlain Valley Hospital	Gen	84	55	Church	Yes[1]	R.N	1910
Children s Home of Northern New York[2]	Chil	12	4	Indep	No	Lay	1874
Physicians Hospital	Gen	100	36	Indep	Yes[1]	R N	1910
Station Hospital	Gen	50	33	Army	No	M D	1894
Pleasantville 3 674—Westchester							
Hebrew Sheltering Guardian Orphan Asylum	Chil	40	3	Indep	No	Ph D	1879
Pomona 155—Rockland							
Summit Park Sanatorium	TB	46	45	County	No	M D	1919
Pt Chester 19 800—Westchester							
United Hospital★▲	*Gen*	*101(?)*	*60*	*Indep*	Yes[1]	Lay	1889
Pt Jefferson 2 200—Suffolk							
St Charles Hospital for Crippled Children and Brooklyn Home for Blind and Defective Children	Chil	310	296	Church	No	Lay	1909
Pt Jervis 10 600—Orange							
Deer Park Hospital	Gen	19	8	Indep	Yes	Lay	1903
St Francis Hospital[3]	Gen	61	30	Church	No	Lay	1892
Potsdam 4 472—St Lawrence							
Potsdam Hospital	Gen	14	9	Indep	No	R.N	1924
Poughkeepsie, 35 800—Dutchess							
Children s Home of Poughkeepsie	Chil	10	2	Indep	No	Lay	1847
Hudson River State Hospital	N&M	4 000	3 944	State	Yes[1]	M D	1868
Poughkeepsie City Home and Infirmary[2]	Gen	20	15	City	No	Lay	1907
Sadlier Hospital	Gen	10	9	Indiv	No	Lay	1900
St Francis Hospital▲	Gen	80	40	Church	Yes[1]	R.N	1913
Samuel W Bowne Memorial Hospital+	TB	127	127	Cy&Co	No	M D	1909
Swift Infirmary — Vassar College	Gen	28	10	Indep	No	M D	1832
Vassar Brothers Hosp★▲	Gen	169	116	Indep	Yes[1]	Lay	1882
Rainbow Lake 25—Franklin							
Rainbow Sanatorium	TB	48	30	Frat	No	M D	1910
Ray Brook 40—Essex							
New York State Hosp+	TB	300	287	State	No	M.D	1900
Remsen 448—Oneida							
Witesboro Sanitarium	N&Al	15	7	Indiv	No	M.D	1893
Rhinebeck 1 520—Dutchess							
Holiday Farm Home for Convalescent Children	Conv	60	41	Indiv	No	R N	1902
Thompson Hospital	Gen	15	8	Indep	No	R N	1903
Richland 404—Oswego							
Oswego County Sanatorium	TB	120	95	County	No	M D	1913
Richmond Hill —— Queens							
Jamaica Hospital▲	Gen	123	103	Indep	Yes[1]	R N	1892
Richmond Hill Sanatorium	Gen	14	10	Part	No	R.N	1925
Rochester 320 800—Monroe							
Belvidere Private Hospital	Gen	14	10	Indiv	No	R N	1924
Genesee Hospital★▲	Gen	184	113	Indep	Yes[1]	R.N	1887
Highland Hospital of Rochester★▲	Gen	196	157	Indep	Yes[1]	M D	1889
Iola Sanatorium+	TB	285	254	County	No	Lay	1910
Infants Summer Hospital	Chil	88	49	Indep	Yes	R.N	1887
Lake Avenue Hospital	Gen	54	40	Indiv	Yes	M D	1898
Monroe County Hospital	Gen	249	227	County	No	Lay	1905
Monroe County Penitentiary	Gen	12	2	County	No	Lay	1915
Park Avenue Hospital▲	Gen	81	62	Indep	Yes[1]	R N	1902
Rest Haven	N&M Conv	10	6	Indiv	No	Lay	1925
Rochester General Hosp★+▲	Gen	265	241	Indep	Yes[1]	M D	1847
Rochester Municipal Hospital	Gen	225	28	City	No	Lay	1903
Rochester State Hospital	N&M	1 840	1 800	State	Yes[1]	Lay	1891
St Mary s Hospital★▲	Gen	177	145	Church	Yes[1]	R N	1857
Strong Memorial Hosp+★▲	Gen	246	76	Church	Yes[1]	M D	1925
Rockaway Beach —— Queens							
Rockaway Beach Hospital and Dispensary▲	Gen	100	60	Indep	No	Lay	1903
Rockaway Park —— Queens							
Convalescent Home for Hebrew Children	Conv	100	90	Indep	No	R N	1879
Neponsit Beach Hospital for Children	TB	120	110	City	No	R N	915
Rockville Center 10 316—Nassau							
Rockville Center Sanitarium	Gen	19	10	Indiv	No	R N	1917
Rome 31 100—Oneida							
James A Murphy Memorial Hospital	Gen	24	15	City	No	R N	1926
Oneida County Hospital▲	Gen	180	1[illegible]4	County	No	M D	1912
Rome Hospital▲	Gen	48	41	Indep	Yes[1]	R.N	1884
Rome Infirmary	Gen	55	27	Indiv	Yes	R.N	1907
Rome State School+	N&M	160	146	State	No	M D	1894
Sackets Harbor 75—Jefferson							
Station Hospital	Gen	27	15	Army	No	M D	1819
St Josephs —— Sullivan							
St Josephs Sanatorium	Conv	225	35	Church	No	Lay	1896
Salamanca 9 878—Cattaraugus							
City Hospital	Gen	27	21	City	No	R N	1897
Salisbury Center 300—Herkimer							
Pine Crest Sanatorium	TB	90	83	County	No	M D	1920
Saranac Lake 6 576—Franklin							
General Hospital of Saranac Lake	Gen	35	16	Indep	No	R.N	1912
Northwoods Sanatorium	TB	20	15	Indep	No	Lay	1924
Reception Hospital	TB	20	19	Indep	No	R N	190[illegible]
St Mary s of the Lake	TB	30	23	Church	No	Lay	1910
Spion Kop Sanitarium	TB	25	25	Indep	No	M D	1925
Saratoga Springs 14 000—Saratoga							
Dr R H McCarty s Hosp[3]	Gen	25	12	Indiv	No	Lay	1890
Saratoga Hospital▲	Gen	85	51	Indep	Yes[1]	R N	1891
Saugerties 4 228—*Ulster*							
Beers Sanitarium	Gen	11	8	Indiv	No	R N	1924
Schenectady 93 000—Schenectady							
Ellis Hospital★▲	Gen	236	150	Indep	Yes[1]	R.N	1891
General Electric Company Industrial Hospital	Indus	9	3	Indus	No	M D	1920
Glenridge Sanatorium	TB	112	90	County	No	M D	1909
Schenectady City Hospital	Iso	36	5	City	No	R.N	1906
Schenectady County Almshouse and Hospital	Gen	50	50	County	No	Lay	.
Sea Cliff 3 101—Nassau							
Country Home for Convalescent Babies	Chil Conv	36	30	Indep	No	R N	1895
Seneca Falls 6 477—Seneca							
Seneca Falls Hospital	Gen	22	16	City	No	R.N	1910
Sherburne 1 151—Chenango							
Brookside Crest Sanitarium	TB	22	15	County	No	M.D	1918
Sodus 1 361—Wayne							
Myers Hospital	Gen	35	20	Indiv	No	M D	1900
Sonyea —— Livingston							
Craig Colony	Epil	1 500	1 500	State	Yes[1]	M D	1894
Southampton 3 952—Suffolk							
Southampton Hospital▲	Gen	60	33	Indep	Yes[1]	R.N	1909
Stamford 1 151—Deleware							
Stamford Hospital	Gen	10	3	Indep	No	M D	1920
Staten Island 115 959—Richmond							
Home for Dependents[2]	Gen	50	49	City	No	M D	1917
Richmond Memorial Hosp	Gen	25	17	Indep	No	Lay	1919
Sailors Snug Harbor Hospital	Gen	200	160	Indep	No	M.D	1891
St Vincent s Hospital of the Borough of Richmond▲	Gen	90	71	Church	Yes	R N	1903
Seaside Hospital	Chil	190	176	Indep	Yes	Lay	1877
Sea View Hospital	TB	994	922	City	No	M.D	1913
Staten Island Hospital★▲	Gen	239	111	Indep	Yes[1]	M D	1861
United States Marine Hospital No 21★▲	Gen	311	265	USPHS	No	M D	1798
Suffern 3 349—Rockland							
Good Samaritan Hospital	Gen	30	20	Church	No	R N	1902
Sunmount —— Franklin							
United States Veterans Hospital No 96▲	TB	365	325	VetBur	No	M.D	1924
Syracuse 185 400—Onondaga							
City Hospital	Iso	140	15	City	No	R N	1875
Crouse Irving Hospital▲	Gen	220	160	Indep	Yes[1]	M D	1912
General Hospital of Syracuse▲	Gen	85	69	Indep	Yes[1]	Lay	1895
Hospital of the Good Shepherd★+▲	Gen	252	173	Indep	Yes[1]	R N	1872
Private Home Sanitarium	Conv	15	14	Indiv	No	R N	1926
Onondaga General Hospital	Gen	41	26	Indep	Yes	Lay	1918
Onondaga Sanatorium	TB	167	159	County	No	M D	1916
Peoples Hospital	Gen	33	18	Indep	Yes	R.N	1913
St Joseph Hospital▲	Gen	204	81	Church	Yes[1]	R N	1869
St Mary s Maternity and Infant Hospital	Mater	25	14	Church	Yes	Lay	1900
Syracuse Memorial Hospital★▲	Gen	131	113	Indep	Yes[1]	R N	1887
Syracuse Sanitarium[3]	Gen	10	5	Indiv	No	M D	1887
Syracuse State School	Men Def	1,100	952	State	No	M D	1851
Tarrytown 6 199—Westchester							
Robins Nest	Ortho	35	28	Indep	No	R N	1891
Tarrytown Hospital▲	Gen	41	29	Indep	No	R N	1892
Taughannock Falls 66—Tompkins							
Tompkins County Tuberculosis Hospital	TB	30	23	County	No	M D	1913
Thiells 320—Rockland							
Letchworth Village+	Men Def	2 190	2 035	State	No	M D	1910
Ticonderoga 3 958—Essex							
Moses Ludington Hospital	Gen	42	21	Indep	No	R N	1908
Troy 72 300—Rensselaer							
Leonard Hospital▲	Gen	53	40	Indep	Yes[1]	R N	1894
Marshall Sanitarium	N&M	60	40	Indep	No	M D	1851
Rensselaer County Almshouse Hospital	Gen	69	59	County	No	Lay	1882
St. Joseph s Maternity Hospital	Mater	3[illegible]	11	Church	Yes[1]	Lay	1908
Samaritan Hospital★▲	Gen	166	114	Indep	Yes[1]	R N	18[illegible]
Troy Hospital▲	Gen	262	160	Church	Yes[1]	R.N	1850
Troy Orphan Asylum[2]	Chil	36	8	Indep	No	Lay	1833
Trudeau 230—Essex							
Trudeau Sanatorium	TB	180	180	Indep	Yes[1]	Lay	1884
Tupper Lake 3 041—Franklin							
Mercy General Hospital[3]	Gen	20	9	Church	No	R N	1919
Veterans Mountain Camp American Legion	Conv	75	45	Indep	No	Lay	1921
Tuxedo Park 2,000—Orange							
Tuxedo Memorial Hosp	Gen	30	14	Indep	No	Lay	1907
Utica 102 500—Oneida							
Faxton Hospital and Training School for Nurses▲	Gen	130	101	Indep	Yes[1]	R N	1874
Masonic Soldiers and Sailors Memorial Hospital▲	Gen	200	149	Frat	No	Lay	1922
St Elisabeth s Hospital▲	Gen	102	80	Church	Yes[1]	R N	1865
St Luke s Home and Hospital▲	Gen	123	69	Church	Yes[1]	Lay	1869
Utica General Hospital▲	Gen	119	47	City	No	R N	1856

NEW YORK—Cont City Pop—County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt M D R N Lay	Year Est
Utica Memorial Hospital▲	Gen	61	47	Indep	Yes[1]	R N	1895
Utica State Hospital	N&M	2 707	2 571	State	Yes[1]	M D	1843
Valhalla 620—Westchester							
Blythedale Home for Convalescent Crippled Children	Conv	68	54	Indep	No	R N	1895
Grasslands Hospital*▲	Gen	401	333	County	Yes	M D	1889
Martha Home for Convalescent Boys	Conv	15	15	Indep	No	M D	1926
Milbank Memorial Home for Convalescent Boys	Conv	50	50	Indep	No	M D	1925
Valley Cottage 212—Rockland							
Reed Farm & Nichols Cottage Convalescent Home	Conv	26	15	Indiv	No	R N	1906
Warsaw 3 404—Wyoming							
Wyoming County Community Hospital▲	Gen	55	32	Indep	Yes	R N	1910
Warwick 2 471—Orange							
Warwick Hospital and Clinic	Gen	22	14	Indiv	No	Lay	1906
Waterloo 3 921—Seneca							
Waterloo Memorial Hosp	Gen	14	7	Indep	No	R N	1920
Watertown 33 100—Jefferson							
House of the Good Samaritan▲	Gen	106	85	Indep	Yes[1]	R N	1881
Jefferson County Home[3]	Gen	32	27	County	No	Lay	
Jefferson County Tuberculosis Sanatorium	TB	30	36	County	No	M D	1916
Mercy Hospital▲	Gen	100	55	Church	Yes[1]	R N	1894
Watkins Glenn 2 919—Schuyler							
Glen Springs	Card	200	75	Indep	No	Lay	1890
Wellsville 4 853—Allegany							
Jones Memorial Hospital	Gen	32	25	City	No	R N	1920
Wellsville Sanitarium	Conv	40	23	Indiv	No	M D	1901
Westchester —— Bronx							
Station Hospital	Gen	24	11	Army	Yes	M D	1861
West Haverstraw 2 715—Rockland							
New York State Orthopedic Hospital for Children+▲	Ortho	200	196	State	No	Lay	1900
West Point 1 250—Orange							
Station Hospital	Gen	100	44	Army	No	M D	1803
White Plains 28 700—Westchester							
Bloomingdale Hospital+	N&M	350	267	Indep	Yes[1]	M D	1821
Campbell Cottages for Convalescent Children	Conv	80	80	Indep	No	R N	1900
Martine Farm Children's Cardiac Convalescent Home	Conv	25	25	Indiv	No	R N	1921
Mary Zinn Home for Convalescent Children	Conv	41	40	Indiv	No	G N	1919
New York Orthopedic Dispensary and Hospital	Ortho	164	158	Indep	No	Lay	1903
St Agnes Hospital	Gen	148	101	Church	No	Lay	1908
White *Plains Hospital*▲	Gen	96	57	Indep	Yes[1]	R N	1893
Winifred Masterson Burke Relief Foundation	Conv	290	270	Indep	No	M D	1911
Whitestone — Queens							
Dr Harrison's Sanitarium	N&M	54	29	Indiv	No	M D	1890
Willard 200—Seneca							
Willard State Hospital	N&M	2 524	2 447	State	Yes[1]	M D	1869
Williamsville 2 512—Erie							
Josephine Goodyear Convalescent Home	Conv	60	55	Indep	No	R N	1912
Wingdale 156—Dutchess							
Harlem Valley State Hosp	N&M	606	522	State	No	M D	1924
Woodhaven — Queens							
St Anthony's Hospital	TB	378	321	Church	No	Lay	1914
Wynantskill 167—Rensselaer							
Pawling Sanitarium	TB	180	145	County	No	M D	1919
Yonkers 116 300—Westchester							
Hebrew National Orphan Home[3]	Chil	15	8	Indep	No	Lay	1913
Leake and Watts Orphan House[3]	Chil	28	2	Indep	No	Lay	1831
Neustadter Convalescent Home	Conv	58	40	Indep	No	R N	1919
St John's Riverside Hospital*▲	Gen	95(a)	70	Church	Yes[1]	R N	1870
St Joseph's Hospital*▲	Gen	105(a)	61	Church	Yes[1]	R N	1888
Sprain Ridge Hospital	TB	24	24	Indep	No	R N	1908
Sunny Rest Sanitarium	Conv	15	14	Indiv	No	M D	1915
Yonkers City Hospital for Communicable Diseases	Iso	100	71	City	No	R N	1912
Yonkers Homeopathic Hospital and Maternity▲	Gen	87	59	Indep	Yes[1]	R N	1896
Yonkers Tuberculosis Hosp	TB	54	40	City	No	R N	1912

Total registered hospitals in New York 620 capacity 120 051 average census 99 958 Hospitals not admitted to the register 22 capacity 660

NORTH CAROLINA City Pop—County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt M D R.N Lay	Year Est
Albemarle 2 691—Stanly							
Tally Brunson Hospital	Gen	25	15	Indep	No	M D	1924
Yadkin Hospital	Gen	24	13	Indep	No	M D	1926
Altapass 81—Mitchell							
Holman Hospital	Gen	10	5	Indiv	No	Lay	1910
Asheboro 2 553—Randolph							
Memorial Hospital	Gen	22	12	Indiv	No	M D	1920
Asheville 52 000—Buncombe							
Ambler Heights Sanitarium	TB	50	40	Part	No	M D	1922
Andes Sanitarium	TB	32	18	Indiv	No	Lay	1923
Appalachian Hall	N&M	45	28	Part	Yes	M D	1916
Asheville Mission Hospital▲	Gen	100	80	Indep	Yes	R.N	1885
Blue Ridge Hospital	Gen	25	20	Indep	Yes	R.N	1921
Edgewood Cottage	TB	24	15	Part	No	R N	1900
Fairview Cottage Sanit	TB	135	100	Indiv	No	Lay	1904
French Broad Hospital	Gen	57	41	Indep	Yes	R N	1922
Meriwether Hospital▲	Gen	50	30	Indiv	Yes	R N	1903
Oak Hill Sanatorium	TB	36	20	Indiv	No	Lay	1916
St Joseph's Sanatorium	TB	95	93	Church	No	Lay	1900
Stonehedge Sanitarium	TB	35	30	Indiv	No	Lay	
Sunset Heights	TB	30	25	Indep	No	R N	1922
Sunset Lodge	TB	12	5	Indiv	No	R N	1916
Violet Hill Sanatorium	TB	40	30	Indiv	No	Lay	1895
Winyah Sanatorium	TB	110	65	Indep	No	Lay	1888
Zephyr Hill Sanatorium	TB	30	25	Indiv	No	R N	1920
Badin 3 040—Stanly							
Badin Hospital	Indus	30	9	Indus	No	M D	1918
Banners Elk 162—Avery							
Grace Hospital	Gen	25	15	Church	Yes	M D	1924
Barium Springs — Iredell							
Presbyterian Orphans Home[2]	Chil	40	5	Church	No	Lay	1891
Biltmore 172—Buncombe							
Biltmore Hospital▲	Gen	40	30	Indep	Yes	R N	1899
Hillcroft Sanatorium	TB	56	50	Indiv	No	R N	1920
Black Mountain 531—Buncombe							
Beallmont Park Sanatorium	N&M	20	12	Indiv	No	M D	1921
Cragmont Sanatorium	TB	35	25	Indep	No	M D	1906
Fellowship Association of the Royal League Hosp	TB	25	18	Frat	No	M D	1904
Boone 374—Watauga							
Watauga Hospital	Gen	12	4	Indiv	No	M D	1923
Burlington 5 952—Alamance							
Rainey Hospital	Gen	26	14	Part	Yes	R N	1916
Chapel Hill 1 483—Orange							
University Infirmary[2]	Gen	42	12	State	No	R N	1895
Charlotte 54 600—Mecklenburg							
Charlotte Eye Ear and Throat Hospital▲	EENT	23	14	Part	No	R N	1923
Florence Crittenton Industrial Home	Mater	5	2	Indep	No	Lay	1907
Good Samaritan Hospital	Gen	50	35	Church	Yes	R.N	1888
Mercy Hospital▲	Gen	65	48	Church	Yes	Lay	1906
New Charlotte Sanatorium▲	Gen	75	65	Indep	Yes	R N	1907
Presbyterian Hospital	Gen	100	76	Church	Yes	Lay	190
St *Peter's Hospital*	Gen	66	45	Church	Yes	R N	1876
Thompson Orphanage and Training Institution	Chil	15	2	Church	No	Lay	1887
Cherokee 35—Swain							
Eastern Cherokee Indian Hospital	Gen	20	2	Indian	No	Lay	1915
Concord 9 903—Cabarrus							
Concord Hospital	Gen	25	15	Indiv	Yes	R N	1910
Davidson 1 156—Mecklenburg							
Davidson College Infirm	Gen	17	4	Indep	No	M D	1908
Durham 43 900—Durham							
Lincoln Hospital	Gen	100	56	Indep	Yes	M D	1901
McPherson Hospital	EENT	25	6	Indiv	No	R N	1926
Watts Hospital*▲	Gen	170	100	Indep	Yes	Lay	1895
Elizabeth City 8 925—Pasquotank							
Elizabeth City Hospital	Gen	54	12	Part	Yes	R N	1915
Elkin 1 195—Surry							
Elkin Hospital	Gen	15	11	Indiv	No	R N	1924
Erwin 4 000—Harnett							
Good Hope Hospital	Indus	20	8	Indus	No	R N	1912
Fayetteville 8 877—Cumberland							
Fayetteville Eye Ear Nose and Throat Hospital	EENT	10	2	Part	No	R N	1925
Highsmith Hospital▲	Gen	100	51	Indep	Yes	M D	1899
Pittman Hospital▲	Gen	60	50	Indep	Yes	R N	1910
Fletcher 50—Henderson							
Asheville Agricultural School and Mountain Sanat	Gen	28	10	Church	Yes	R N	1910
Ft Bragg — Cumberland							
Station Hospital	Gen	100	77	Army	No	M D	1919
Franklin 773—Macon							
Angel Brothers Hospital	Gen	50	40	Indiv	Yes	M D	1923
Lyle Hospital	Gen	20	10	Indiv	No	M D	1910
Gastonia 17 600—Gaston							
City Hospital	Gen	60	20	Indep	Yes	R N	1909
Gaston County Colored Hospital	Gen	13	3	Indep	No	R N	1920
Gaston County Sanatorium	Gen	50	20	Indep	Yes	R N	1917
North Carolina Orthopedic Hosp for Crippled Child▲	Ortho	85	79	State	No	R N	1921
Goldsboro 14 800—Wayne							
Goldsboro City Hospital	Gen	40	17	Cy&Co	No	R N	1896
Independent Order of Odd Fellows Home	Gen	12	3	Frat	No	Lay	1892
Spicer's Sanatorium	Gen	25	18	Indiv	Yes	R N	1914
State Hospital at Goldsboro	N&M	1 590	1 535	State	No	M D	1880
Greensboro 48 700—*Guilford*							
Glenwood Park Sanitarium	Conv	35	25	Indiv	No	M D	1905
Reaves Eye Ear Nose and Throat Infirmary	EENT	15	6	Indiv	No	M D	1908
L Richardson Memorial Hospital	Gen	56	52	Indep	Yes	M D	1927
St Leo's Hospital	Gen	100	60	Church	Yes	Lay	1906
Wesley Long Hospital▲	Gen	54	29	Indep	Yes	Lay	1917
Greenville 5 772—Pitt							
Pitt Community Hospital▲	Gen	42	15	Indep	Yes	M D	1923
Halifax 299—Halifax							
Halifax County Tuberculosis Sanitarium	TB	21	8	County	No	R N	1923
Hamlet 3 659—*Richmond*							
Hamlet Hospital	Gen	75	30	Indep	Yes	R N	1910
Henderson 5 222—Vance							
Jubilee Hospital	Gen	17	10	Church	Yes	R N	1911
Maria Parham Hospital	Gen	50	10	Indep	Yes	M D	1925
Hendersonville 3 720—Henderson							
Dixon Health Resort	Conv	30	8	Indiv	No	M D	1912
Edgemont Sanatorium	TB	24	12	Indiv	No	M D	1907
Patton Memorial Hospital	Gen	40	14	Indep	No	R N	1913

NORTH CAROLINA—Cont

City Pop—County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt M D R N Lay	Year Est
Hickory 5 076—Catawba							
Richard Baker Hospital ▲	Gen	35	20	Indiv	Yes	R N	1911
Highlands 504—Macon							
Brookside Camp	TB	13	10	Indiv	No	Lay	1916
High Point 24 300—Guilford							
Guilford General Hospital	Gen	35	25	Indep	Yes	R N	1917
High Point Hospital ▲	Gen	75	65	Indiv	Yes	R N	1912
Huntersville 833—Mecklenburg							
Mecklenburg Sanatorium	TB	120	85	County	No	M D	1926
Jamestown 150—Guilford							
Guilford County Sanatorium for the Treatment of Tuberculosis	TB	75	70	County	No	M D	1923
Kinston 9 771—Lenoir							
Caswell Training School	N&M	55	25	State	No	M D	1911
Memorial General Hospital	Gen	35	18	Indep	Yes	R N	1925
Parrott Memorial Hospital	Gen	45	15	Indep	Yes	M D	1906
Leaksville 1 606—Rockingham							
Leaksville Hospital	Gen	30	20	Indep	Yes	M D	1924
Lenoir 3 718—Caldwell							
Caldwell Hospital	Gen	25	13	Indep	Yes	Lay	1926
Lexington 5 254—Davidson							
Davidson Hospital	Gen	24	13	Indiv	Yes	R N	1924
Lincolnton 3 390—Lincoln							
Lincoln Hospital ▲	Gen	42	15	Indiv	Yes	R N	1907
Lumberton 2 691—Robeson							
Baker Sanatorium	Gen	65	35	Indiv	Yes	R N	1921
Thompson Memorial Hosp	Gen	35	24	Indep	Yes	M D	1926
Monroe 4 084—Union							
Ellen Fitzgerald Hospital	Gen	55	15	Indiv	Yes	R N	1921
Quality Hill Sanatorium	Gen	16	6	Indiv	No	M D	1912
Mooresville 4,315—Iredell							
Lowrance Hospital	Gen	25	20	Indep	Yes	R N	1926
Morehead City 2 958—Carteret							
Morehead City Hospital	Gen	25	15	Indep	Yes	R N	1911
Morganton 2,867—Burke							
Broadoaks Sanatorium	N&M	60	45	Part	No	M D	1901
Grace Hospital	Gen	41	31	Church	Yes	R N	1900
North Carolina School for the Deaf[2]	Gen	23	2	State	No	Lay	1894
State Hospital for Insane	N&M	1 941	1 735	State	Yes	M D	1882
Mt. Airy 4 752—Surry							
Martin Memorial Hospital ▲	Gen	44	30	Indiv	Yes	R N	1915
New Bern 12 200—Craven							
New Bern General Hospital	Gen	21	15	Indep	Yes	R N	1918
St Luke s Hospital	Gen	25	20	Part	Yes	R N	1915
Old Fort 931—McDowell							
Pine Cove Sanitarium	Gen	12	4	Indep	No	Lay	1925
Oteen 504—Buncombe							
United States Veterans Hospital No 60 ▲	TB	865	650	VetBur	No	M D	1920
Oxford 3 606—Granville							
Brantwood Hospital	Gen	30	14	Indep	Yes	R N	1920
William J Hicks Memorial Hospital[2]	Chil	72	3	Frat	No	Lay	1923
Raleigh 31 000—Wake							
Mary Elizabeth Hospital	Gen	35	20	Indiv	Yes	M D	1914
McCauley Private Hospital	Gen	12	7	Indiv	No	M D	1923
Methodist Orphanage Infirmary[2]	Chil	15	8	Church	No	Lay	1900
North Carolina State School for the Blind and Deaf	Gen	18	5	State	No	Lay	1845
Rex Hospital ★▲	Gen	110	78	Cy&Co	Yes	R N	1839
St Agnes Hospital ★	Gen	90	60	Church	Yes	R N	1896
State Hospital	N&M	1 792	1 474	State	Yes	M D	1856
Wake County Home Hosp	Gen	106	120	County	No	Lay	1915
Roanoke Rapids 3 369—Halifax							
Roanoke Rapids Hospital	Gen	85	41	Indep	Yes	R N	1914
Rocky Mount 15 500—Nash							
Atlantic Coast Line Hosp ▲	Indus	50	32	Indus	No	R N	1892
Park View Hospital ▲	Gen	75	54	Indep	Yes	R N	1914
Rocky Mount Sanitarium	Gen	40	25	Indiv	Yes	M D	1913
Rutherfordton 1 693—Rutherford							
Rutherford Hospital ▲	Gen	60	33	Indep	Yes	R N	1906
Salisbury 18 400—Rowan							
Salisbury Hospital	Gen	60	40	Indep	Yes	R N	1900
Saluda 549—Polk							
Infants and Children s Sanitarium	Chil	65	60	Indiv	No	R N	1914
Spartanburg Baby Hospital	Chil	25	20	Indep	No	R N	1914
Samarcand 113—Moore							
State Home and Industrial School for Girls[2]	Gen	24	6	State	No	Lay	1918
Sanatorium — Wake							
North Carolina Sanatorium for the Treatment of Tuberculosis +	TB	470	252	State	Yes	M D	1907
Sanford 2,977—Lee							
Central Carolina Hospital	Gen	25	20	Indiv	Yes	R N	1906
Scott Hospital	Gen	26	16	Indep	Yes	Lay	1924
Shelby 3 609—Cleveland							
Shelby Hospital	Gen	40	25	Cy&Co	Yes	R N	1923
Smithfield 1 895—Johnston							
Johnston County Hospital	Gen	35	18	Indep	Yes	M D	1926
Southern Pines 743—Moore							
Pine-Crest Manor Sanat	TB	66	48	Indep	No	M D	1922
Statesville 7 895—Iredell							
Davis Hospital +▲	Gen	56	45	Indep	Yes	M D	1919
Long s Sanatorium ▲	Gen	50	39	Indiv	Yes	R N	1901
Sylva 863—Jackson							
Candler Tidmarsh Hospital	Gen	40	24	Part	Yes	R N	1927
Tarboro 4 568—Edgecombe							
Edgecombe County Tuberculosis Sanitarium	TB	25	19	County	No	R N	1922
Edgecombe General Hosp[2]	Gen	35	20	Indep	Yes	Lay	1916
Thomasville 5 676—Davidson							
Thomasville Baptist Orphanage Infirmary[2]	Chil	40	10	Church	No	R N	1885
Tryon 1 067—Polk							
Tryon Infirmary	Gen	15	6	Part	No	M D	1922
Wadesboro 2,648—Anson							
Anson Sanatorium	Gen	50	21	Indep	Yes	Lay	1913
Wake Forest 1 425—Wake							
Wake Forest College Hosp[2]	Gen	13	3	Indep	No	Lay	1906
Washington 6 166—Beaufort							
River View Hospital	Gen	20	15	Indiv	Yes	R N	1904
Washington Hospital	Gen	35	18	Indep	Yes	R N	1904
Waynesville 1 942—Haywood							
Haywood County Hospital	Gen	35	New	County	Yes	R N	1928
Weaverville 606—Buncombe							
Bethel Home	TB	10	6	Indiv	No	Lay	1919
West Jefferson 462—Ashe							
Blevins Sanatorium	Gen	10	8	Indiv	No	M D	1925
Whiterock 72—Madison							
Laurel Hospital	Gen	20	3	Church	No	M D	1919
Wilmington 37 700—New Hanover							
Bulluck Hospital ▲	Gen	33	15	Indiv	Yes	M D	1921
Community Hospital	Gen	25	15	Cy&Co	Yes	R N	1920
James Walker Mem Hosp ★▲	Gen	130	77	Indep	Yes	Lay	1901
Red Cross Sanatorium	TB	25	14	Indep	No	M D	1914
Wilson 13 200—Wilson							
Carolina General Hospital	Gen	50	27	Indep	Yes	R N	1911
Moore-Herring Hospital	Gen	35	12	Indep	Yes	Lay	1913
Wilson Hospital and Tubercular Home	Gen	50	6	Cy&Co	Yes	R N	1913
Winston-Salem 71 800—Forsyth							
Children s Home	Chil	40	10	Church	No	Lay	1909
City Memorial Hospital ★▲	Gen	225	75	City	Yes	M D	1910
Forsyth County Tuberculosis Hospital	TB	44	33	County	No	Lay	1917
Lawrence-Cooke Clinic Hospital ▲	Gen	44	22	Indep	Yes	R N	1919
North Carolina Baptist Hospital ▲	Gen	70	55	Church	Yes	Lay	1922

Total registered hospitals in North Carolina 158 capacity 13 499 average census 9 731 Hospitals not admitted to the register 6 capacity, 195

NORTH DAKOTA

City Pop—County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt M D R N Lay	Year Est
Ambrose 254—Divide							
Divide County Community Hospital	Gen	18	8	County	No	M D	1927
Arthur 246—Cass							
Evangelical Lutheran Good Samaritan Home	Epil	100	66	Church	No	Lay	1923
Arvilla 168—Grand Forks							
Grand Forks County Hosp	Gen	70	40	County	No	Lay	1890
Belcourt 205—Rolette							
Turtle Mountain Indian Hospital	Gen	30	14	Indian	No	Lay	1916
Bismarck 6 951—Burleigh							
Bismarck Hospital and Deaconess Home ★▲	Gen	128	120	Church	Yes[1]	R N	1908
North Dakota State Penitentiary Hospital	Gen	25	12	State	No	Lay	1903
St Alexius Hospital ▲	Gen	150	125	Church	Yes[1]	Lay	1884
Bottineau 1 172—Bottineau							
St Andrew s Hospital	Gen	30	19	Church	No	R N	1913
Bowbells 615—Burke							
Bowbells Hospital	Gen	5	2	Indiv	No	Lay	1905
Carrington 1 420—Foster							
Carrington Hospital	Gen	20	12	Indep	No	R N	1916
Devils Lake 5 140—Ramsey							
General Hospital of Devils Lake	Gen	40	20	Indep	Yes[1]	R N	1908
Mercy Hospital and Mercy Detention Hospital	Gen	50	34	Church	Yes[1]	R N	1902
Dickinson 4 122—Stark							
St Joseph s Hospital	Gen	50	34	Church	No	Lay	1911
Drayton 637—Pembina							
Drayton Hospital	Gen	14	12	Indep	No	R N	1906
Edgeley 735—LaMoure							
Edgeley Hospital	Gen	12	6	Indiv	No	M D	1920
Elgin 414—Grant							
Community Hospital	Gen	7	3	Indep	No	M D	
Fargo 26 403—Cass							
Camp Maternity Hospital	Mater	15	8	Indiv	No	Lay	1904
Cass County Hospital	Gen	30	20	County	No	R N	1881
City Detention Hospital	Iso	40	3	City	No	M D	1911
Florence Crittenton Home	Mater	10	3	Indep	No	Lay	1917
St John s Hospital ★▲	Gen	175	110	Church	Yes[1]	R N	1900
St Luke s Hospital ▲	Gen	140	74	Church	Yes[1]	R N	1905
Ft Totten 61—Benson							
Ft Totten Indian School Hospital	Gen	12	7	Indian	No	M D	1902
Ft Yates 400—Sioux							
Standing Rock Indian Hosp	Gen	30	20	Indian	No	Lay	1915
Grafton 2 512—Walsh							
Grafton Deaconess Hospital	Gen	32	28	Church	Yes[1]	R N	1904
North Dakota Institution for the Feebleminded	N&M	560	502	State	No	M D	1902
Grand Forks 15 400—Grand Forks							
Grand Forks City Hosp[3]	Iso	18	5	City	No	Lay	
Grand Forks Deaconess Hospital ▲	Gen	85	60	Church	Yes[1]	Lay	1895
St Michael s Hospital ▲	Gen	57	36	Church	Yes[1]	R N	1907
Harvey 1 590—Wells							
Reimche Memorial Hospital	Gen	16	8	Indiv	No	M D	1926
St Luke s Hospital	Gen	17	6	Church	No	R N	1916
Jamestown 6 627—Stutsman							
North Dakota State Hospital for Insane +	N&M	1 400	1 342	State	No	M D	1883
Trinity Hospital	Gen	85	45	Church	Yes[1]	R N	1914
Kenmare 1 446—Ward							
Kenmare Deaconess Hosp	Gen	45	21	Church	Yes	R N	1912

NORTH DAKOTA—Cont. City Pop—County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt M D R.N Lay	Year Est
Lidgerwood 1 065—Richland							
Lidgerwood Hospital	Gen	12	5	Indiv	No	Lay	1902
Linton 1 034—Emmons							
Wolverton Hospital	Gen	5	2	Indiv	No	M D	1913
Lisbon 1,626—Ransom							
Lisbon Hospital	Gen	10	3	Part	No	M D	1903
Mandan 4 336—Morton							
Mandan Deaconess Hosp	Gen	35	12	Church	Yes	R N	1910
Mayville 1 218—Traill							
Union Hospital	Gen	8	3	Indep	No	R N	1898
McVille 546—Nelson							
Community Hospital	Gen	15	10	Indep	No	R N	1917
Minot 12 700—Ward							
McCannel s Private Hospital	EENT	12	7	Indiv	No	M D	1915
St Joseph s Hospital	Gen	75	53	Church	Yes[1]	Lay	1911
Trinity Hospital	Gen	150	96	Church	Yes[1]	R N	1922
New Rockford 2 111—Eddy							
Donahue Hospital	Gen	15	5	Indiv	No	Lay	1916
Northwood 935—Grand Forks							
Northwood Deaconess Hospital and Home	Gen	25	10	Church	No	Lay	1900
Rolette 409—Rolette							
Hayhurst Hospital	Gen	10	5	Indiv	No	M D	1917
Rugby 1 424—Pierce							
Good Samaritan Hospital	Gen	45	32	Church	Yes[1]	R N	1906
San Haven — Rolette							
North Dakota State Tuberculosis Sanatorium	TB	160	95	State	Yes	M D	1912
Valley City 4 686—Barnes							
Barnes County Hospital	Gen	27	15	County	No	R N	1910
Wahpeton 3 069—Richland							
Wahpeton Hospital	Gen	29	20	Part	Yes[1]	R N	1916
Wahpeton Indian School Hospital	Gen	20	12	Indian	No	Lay	1915
Williston 4 178—Williams							
Mercy Hospital	Gen	60	30	Church	Yes[1]	Lay	1920
Wittenberg Hospital	Gen	14	5	Church	No	R N	1912

Total registered hospitals in North Dakota 53 capacity 4 243 average census 3,215 Hospitals not admitted to the register 4 capacity 105

OHIO

City Pop—County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt M D R N Lay	Year Est
Akron 208 435—Summit							
Children s Hospital and Mary Day Nursery +▲	Gen	108	57	Indep	Yes	Lay	1891
City Hospital of Akron ★▲	Gen	161	151	Indep	Yes[1]	Lay	1892
Goodyear Hospital and Dispensary	Indus	25	6	Indus	No	M D	1907
Peoples Hospital ▲	Gen	154	86	Indep	Yes[1]	Lay	1914
Stevenson and Weaver Hospital	EENT	11	4	Part	No	M D	1912
Alliance 25 500—Stark							
Alliance City Hospital ▲	Gen	88	45	City	Yes[1]	Lay	1900
Fairmount Children s Home[2]	Chil	9	2	County	No	Lay	1876
Amherst 2 485—Lorain							
Amherst Hospital	Gen	14	8	Indep	No	R N	1917
Ashtabula 25 500—Ashtabula							
Ashtabula General Hospital	Gen	50	45	Indep	Yes[1]	R N	1902
Athens 6 418—Athens							
Athens State Hospital	N&M	1 400	1 327	State	Yes	M D	1874
Sheltering Arms Hospital	Gen	20	5	Indiv	No	R N	1921
Barberton 24 100—Summit							
Citizens Hospital	Gen	39	20	Indep	No	R N	1916
Bedford 2,677—Cuyahoga							
Bedford General Hospital	Gen	10	10	City	No	R N	1920
Bellaire 16 500—Belmont							
City Hospital of Bellaire ▲	Gen	45	25	City	No	R N	1916
Bellefontaine 9 086—Logan							
Harbert Hospital	EENT	10	5	Indiv	No	R N	1919
Mary Rutan Hospital	Gen	21	6	City	No	R N	1919
Bellevue 5 209—Huron							
Bellevue Hospital	Gen	28	13	Indep	No	R N	1917
Berea 2 609—Cuyahoga							
Community Hospital	Gen	32	19	Indep	No	R N	1921
German Methodist Orphan Home -	Chil	12	1	Church	No	Lay	1864
Bluffton 1 950—Allen							
Bluffton Community Hosp	Gen	9	6	Indep	No	Lay	1920
Bowling Green 5 788—Wood							
Bowling Green Sanitarium and Hospital	Gen	20	5	Indiv	No	Lay	1909
Bucyrus 12 000—Crawford							
Monnette Memorial Hosp	Gen	23	14	Indep	No	R N	1906
Cambridge 14 200—Guernsey							
Cambridge Hospital	Gen	15	4	Part	Yes	M D	1912
Lawrence Hospital	Gen	15	8	Indiv	No	M D	1919
Wells Hospital	Gen	24	16	Indep	Yes	M D	1922
Canfield 806—Mahoning							
Mahoning County Home[2]	Gen	18	18	County	No	Lay	1912
Canton 109 800—Stark							
Aultman Memorial Hosp ▲	Gen	139	64	Indep	Yes[1]	Lay	1890
Bethshan Home	Mater	12	7	Church	No	Lay	1911
Dr Felman Eye Ear Nose and Throat Hospital	EENT	5	3	Indiv	No	M D	1922
Mercy Hospital ▲	Gen	90	78	Church	Yes[1]	R N	1908
Celina 4 226—Mercer							
Otis Hospital	Gen	19	6	Indiv	No	M D	1915
Chagrin Falls 2 337—Cuyahoga							
Cleveland Protestant Orphan Asylum[2]	Chil	25	5	Church	No	Lay	1852
Chardon 1 566—Geauga							
Sperry Home	Mater	10	5	Indiv	No	Lay	1920
Chillicothe 16 800—Ross							
Chillicothe Hospital	Gen	42	23	Church	No	Lay	1895
Mt Logan Sanatorium	TB	50	38	County	No	M D	1917
United States Veterans Hospital No 97 ▲	Gen	452	450	VetBur	No	M D	1924
Cincinnati, 410 800—Hamilton							
Bethesda Hospital and Deaconess Association ★▲	Gen	315	189	Church	Yes[1]	Lay	1896
Bethesda Medical Hospital	Gen	60	42	Church	Yes	Lay	1908
Children s Home -	Chil	30	8	Indep	No	Lay	1861
Children s Hosp of Protestant Episcopal Church +▲	Chil	150	63	Church	Yes	M D	1883
Christ Hospital ★▲	Gen	146	130	Church	Yes[1]	Lay	1889
Cincinnati General Hosp ★+▲	Gen	750	601	City	Yes[1]	M D	1821
Cincinnati Orphan Asylum	Chil	10	1	Indep	No	R N	1834
Cincinnati Sanitarium	N&M	100	94	Indep	No	Lay	1873
Cincinnati Widows and Old Men s Home and Asylum for Aged and Indigent Women - [3]	Gen	50	25	Indep	No	Lay	1840
Dr Clarence J Broeman s Private Hospital	Sk&Ca	6	2	Indiv	No	Lay	1924
Deaconess Hospital ▲	Gen	159	54	Church	Yes[1]	Lay	1888
Derrick T Vail s Private Hospital	EENT	20	7	Indiv	No	M D	1906
Dr Edward H Thompson Private Eye Ear Nose and Throat Hospital[3]	EENT	10	8	Indiv	No	Lay	1918
Evangeline Booth Home and Hospital	Mater	23	16	Church	No	Lay	1917
Good Samaritan Hospital ★▲	Gen	600	290	Church	Yes[1]	Lay	1866
Grandview Hospital	N&M	40	34	Indep	No	M D	1900
Hamilton County Tuberculosis Sanatorium	TB	296	241	County	No	M D	1896
Home for Incurables	Incur	60	60	Indep	No	Lay	1890
Hospital and Home fo the Friendless	Mater	12	8	Indep	No	R.N	1855
Jewish Convalescent and Foster Home	Conv	35	20	Indep	No	Lay	1911
Jewish Hospital ★▲	Gen	242	173	Indep	Yes[1]	Lay	1854
Jones and Stitt Ear Nose and Throat Hospital	ENT	6	4	Part	No	R.N	1924
Longview Hospital	N&M	1 900	1 805	State	Yes	M D	1861
Mercy Hospital[3]	Gen	33	10	Indep	No	Lay	1922
Methodist Home for Aged -	Gen	36	15	Church	No	Lay	1899
Mithoefer Hospital	EENT	30	11	*Part*	No	R N	1924
Murphy Memorial Hospital	EENT	12	0	Part	No	Lay	
Ophthalmic Hospital	EENT	10	6	*Indiv*	No	R N	1890
Psychopathic Institute of the Jewish Hospital	N&M	13	11	Indep	Yes	M D	1920
Rest Cottage	Conv	12	9	Indep	No	M D	1915
Ridge Rest Home	N&M	30	20	Indep	No	R N	1921
Rockhill Sanatorium	TB	90	30	Indiv	No	M D	1914
St Francis Hospital for Incurables	Incur	375	385	Church	No	Lay	1888
St Joseph s Infant Asylum and Seton Maternity Hospital	Mater	20	10	Church	No	Lay	1873
St Mary Hospital ★▲	Gen	185	160	Church	Yes	Lay	1858
St Michael s Convalescent Home	Conv	30	26	Indep	No	Lay	1916
St Vincent s Home for Boys	Chil	7	3	Church	No	Lay	1905
Salvation Army Catherine Booth Home and Maternity Hospital	Mater	41	30	Church	No	Lay	1909
Cleveland 960 500—Cuyahoga							
Babies and Children s Hospital of Cleveland +▲	Chil	140	67	Indep	Yes[1]	M D	1925
Carnegie Avenue Hospital	Gen	20	13	Indep	No	M D	1916
Children s Fresh Air Camp and Hospital	Chil	14	10	Indep	No	R N	1889
City Hospital ★+▲	*Gen*	*1 029*	*932*	*City*	Yes[1]	*Lay*	*1837*
Cleveland Clinic Hospital ▲	Gen	277	222	Indep	No	R N	1921
Cleveland State Hospital +	N&M	2 225	2 122	State	No	M D	1855
East 55th Street Hospital	Gen	45	15	Indep	No	Lay	1911
Eliza Jennings Home for Incurables	Incur	60	60	Indep	No	Lay	1888
Emergency Hospital	Gen	20	16	Part	No	M D	1895
Euclid Hospital	Gen	13	4	Indiv	No	Lay	1921
Evangelical Hospital	Gen	39	27	Church	No	Lay	1923
Evangelical Lutheran Hosp▲	Gen	91	70	Church	Yes[1]	R N	1893
Fairview Park Hospital ▲	Gen	80	81	Church	Yes[1]	Lay	1894
Florence Crittenton Home	Mater	15	16	Indep	No	Lay	1912
Flower Hospital	Gen	14	7	Indiv	No	Lay	1922
Glenville Hospital ▲	Gen	83	62	Indep	Yes[1]	Lay	1907
Grace Hospital ▲	Gen	40	29	Indep	No	R N	1910
Holy Cross House for Crippled and Invalid Children	Ortho	40	10	Church	No	R N	1903
Hospital Clinic▲	Gen	50	30	Indep	No	M D	
Huron Road Hospital ▲	Gen	108	80	Indep	Yes[1]	M D	1866
Jewish Orphan s Home -	Chil	28	6	Frat	No	Lay	1868
Joanna Private Hospital and Invalids Home	Gen	19	19	Indiv	No	Lay	1911
Lakeside Hospital ★+▲	Gen	263	203	Indep	Yes[1]	M D	1861
Lakewood Public Hospital ▲	Gen	56	50	Indep	Yes[1]	R.N	1907
Maternity Hospital ▲	Mater	88	70	Indep	Yes[1]	M D	1891
Mt Sinai Hospital ★+▲	Gen	232	170	Indep	Yes[1]	Lay	1916
Nottingham Hospital	Gen	19	12	Part	No	R N	1912
Provident Hospital	Gen	25	21	Indep	No	Lay	1913
St Alexis Hospital ★▲	Gen	235	181	Church	Yes[1]	Lay	1884
St Ann s Maternity Hosp +▲	Mater	55	50	Church	Yes[1]	R.N	1873
St John s Hospital ★▲	Gen	181	146	Church	Yes[1]	R N	1892
St Luke s Hospital ★▲	Gen	160	157	Church	Yes[1]	M D	1906
St Vincent s Charity Hospital ★+▲	Gen	300	282	Church	Yes[1]	R N	1850
Salvation Army Rescue Home and Maternity Hospital	Mater	18	10	Church	No	Lay	1892

OHIO—Cont City Pop —County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt M D R N Lay	Year Est
United States Marine Hospital No 6▲	Gen	83	76	USPHS	No	M D	1832
Windsor Sanitarium	N&M	40	25	Indep	No	Lay	1899
Woman's Hospital▲	Gen	92	71	Indep	No	R N	1913
Columbus 285 500—Franklin							
Children's Hospital▲	Chil	75	52	Indep	No	M D	1892
Columbus Radium Hospital	Gen	49	21	Indep	Yes[1]	R N	1920
Columbus State Hospital+	N&M	2 100	2 186	State	Yes	M D	1879
Florence Crittenton Home	Mater	8	6	Indep	No	Lay	1898
Franklin County Home[3]	Gen	100	55	County	No	Lay	
Franklin County Sanat	TB	210	170	County	No	R N	1914
Friend's Rescue Home	Mater	5	3	Church	No	Lay	1905
Dr Gayer Sanatorium	N&M	25	20	Indiv	No	M D	1886
Grant Hospital★▲	Gen	300	215	Indep	Yes[1]	R.N	1900
Home Sanitarium	Gen	6	4	Indiv	No	Lay	1915
Institution for Feeble-Minded	FeMi	2 100	1 635	State	No	M D	1857
McMillen Sanitarium	N&M	40	33	Indep	No	M.D	1901
Mercy Hospital▲	Gen	65	40	Indep	Yes[1]	R.N	1904
Mt Carmel Hospital★▲	Gen	225	164	Church	Yes[1]	Lay	1886
Ohio Penitentiary Hospital	Gen	125	98	State	No	M D	1834
St Ann's Infant and Maternity Hospital	Mater	25	20	Church	No	Lay	1908
St Anthony's Hospital	Gen	269	250	Church	No	Lay	1890
St Clair Hospital[3]	Gen	31	17	Indep	Yes	R N	1910
St Francis Hospital★▲	Gen	150	110	Church	Yes	Lay	1865
Sanor and McConagha Eye Ear Nose and Throat Hospital	EENT	20	3	Part	No	R.N	1912
Starling Loving University Hospital★▲	Gen	133	106	State	Yes[1]	Lay	1914
State School for the Deaf	Gen	40	10	State	No	Lay	1829
Station Hospital	Gen	60	32	Army	No	M D	1884
White Cross Hospital★▲	Gen	255	230	Church	Yes[1]	Lay	1894
Conneaut, 9 343—Ashtabula							
Brown Memorial Hospital	Gen	35	19	Indep	No	R N	1922
Cortland 750—Trumbull							
Dr McCurley's Private Hospital	Gen	10	4	Indiv	No	Lay	1916
Coshocton 11 700—Coshocton							
Coshocton City Hospital	Gen	42	16	City	Yes[1]	R N	1912
Covington 1,885—Miami							
Covington Hospital	Gen	8	2	Part	No	M.D	1922
Crestline 4 313—Crawford							
Crestline Emergency Hosp	Gen	11	10	Indep	No	Lay	1917
Cuyahoga Falls 13 700—Summit							
Fair Oaks Villa and Cot	N&M	65	59	Indep	No	M D	1894
Dayton 176 600—Montgomery							
Dayton Door of Hope[3]	Mater	12	8	City	No	Lay	1907
Dayton State Hospital+	N&M	1,281	1,217	State	Yes	M.D	1856
Miami Valley Hospital★▲	Gen	358	300	Indep	Yes[1]	M.D	1890
Orchard Springs Sanitarium	N&M	22	17	Indep	No	M D	1911
Quarantine Hospital	Iso	25	1	City	No	Lay	1895
St Elizabeth's Hospital★▲	Gen	405	350	Church	No	Lay	1879
Stillwater Sanitarium	TB	80	71	County	No	R.N	1908
West Side Hospital Clinic[3]	Gen	6	4	Indiv	No	M D	1921
Defiance 8 876—Defiance							
Defiance Hospital[3]	Gen	14	9	Indep	No	Lay	1916
Delaware 8 756—Delaware							
Girls Industrial School Hospital	Gen	23	15	State	No	R.N	1869
Jane M Case Hospital	Gen	55	28	Indep	Yes[1]	R.N	1904
Dennison 5,524—Tuscarawas							
Twin City Hospital	Gen	35	21	Indep	No	R.N	1917
Dover 8 101—Tuscarawas							
Union Hospital	Gen	65	35	Indep	No	R.N	1908
East Akron (Akron P O) Summit							
Springfield Lake Sanatorium	TB	238	225	County	No	M D	1915
East Cleveland 39 400—Cuyahoga							
Ream Sanatorium	Conv	19	6	Indiv	No	Lay	1924
East Liverpool 22 100—Columbiana							
East Liverpool City Hospital	Gen	79	48	City	Yes[1]	R N	1896
Eaton 3 210—Preble							
Dr Iber's Private Hospital	Gen	5	2	Indiv	No	M D	1925
Elyria 24 400—Lorain							
Elyria Memorial Hospital▲	Gen	131	74	Indep	Yes[1]	Lay	1907
Euclid 3,363—Cuyahoga							
Wright's Sanitarium	N&M	19	9	Indiv	No	G N	1910
Fairfield 329—Greene							
Station Hospital	Gen	75	1	Army	No	M D	1917
Flat Rock 360—Seneca							
Ebenezer Orphan Home and Hospital	Chil	16	1	Church	No	Lay	1867
Fostoria 10 099—Seneca							
Fostoria Hospital	Gen	6	2	Indiv	No	Lay	1908
Fremont 14 200—Sandusky							
Community Hospital	Gen	16	New	Indiv	No	M D	1927
Memorial Hospital of Sandusky County▲	Gen	50	20	County	Yes[1]	R.N	1915
Galion 7 374—Crawford							
Good Samaritan Hospital	Gen	15	5	City	No	R N	1913
Gallipolis 6 070—Gallia							
Holzer Hospital▲	Gen	50	53	Indiv	Yes[1]	M.D	1910
Ohio Hospital for Epileptics	Epil	1 900	1 812	State	No	M D	1891
United States Marine Hospital[3]	Gen	12	6	USPHS	No	M D	1851
Geneva 3 081—Ashtabula							
Community Hospital	Gen	17	13	Indep	No	Lay	1918
Greenfield 4 344—Highland							
Greenfield Hospital	Gen	15	8	City	No	R.N	1918
Greenville 7 104—Darke							
Greenville Hospital	Gen	16	[illegible]	Indep	No	R.N	1920
Hamilton, 42,800—Butler							
Butler County Home (T B Dept)	TB	20	10	County	No	Lay	1914
Mercy Hospital★▲	Gen	140	109	Church	Yes[1]	Lay	1892
Ruth Hospital[3]	Chil	14	3	Indep	No	Lay	1904
Hicksville 2 378—Defiance							
Addie Ives Amsden Hosp	Gen	7	2	Indiv	No	R N	1917
Hillsboro, 4 356—Highland							
Hillsboro Hospital	Gen	14	[illegible]	Indep	No	R N	1914
Ironton 15 800—Lawrence							
Charles S Gray Deaconess Hospital	Gen	25	14	City	No	R N	1898
Marting Hospital[3]	Gen	25	18	Indiv	No	M D	1906
Kenton 7 690—Hardin							
McKitrick Hospital	Gen	21	11	Indep	No	R N	1918
San Antonio Hospital	Gen	21	12	Church	No	Lay	1897
Lacarne 155—Ottawa							
Station Hospital	Gen	16	6	Army	No	M D	1917
Lancaster 16 500—Fairfield							
Boys Industrial School Hospital[2]	Gen	100	40	State	No	Lay	1905
Lancaster Municipal Hosp	Gen	52	20	City	Yes[1]	R.N	1916
Lebanon 3 396—Warren							
Blair Brothers Hospital	Gen	9	4	Part	No	M D	1921
Lima 47 700—Allen							
District Tuberculosis Hosp	TB	40	35	County	No	M D	1911
Herr's Hospital Clinic	Gen	8	1	Indep	No	Lay	1925
Lima Hospital Society▲	Gen	90	68	Indep	Yes[1]	R N	1899
Lima State Hospital	N&M	1 019	977	State	No	M D	1914
St Rita's Hospital▲	Gen	100	60	Church	Yes[1]	Lay	1918
Lodi 1 240—Medina							
Lodi Hospital	Gen	15	10	City	No	R N	1916
Logan 5 493—Hocking							
Cherrington Hospital	Gen	35	8	Part	Yes	M D	1908
Lorain 43 100—Lorain							
St Joseph Hospital▲	Gen	106	67	Church	Yes[1]	Lay	1897
Mansfield 32 500—Richland							
Eleanor Thomas Sanitarium	Gen	12	5	Part	No	Lay	1922
Mansfield General Hospital▲	Gen	62	55	Indep	Yes[1]	Lay	1903
Ohio State Reformatory[2]	Gen	30	20	State	Yes	Lay	1886
Marblehead 1 048—Ottawa							
Kelley Island Lime and Transport Company Hospital No 144	Indus	6	2	Indus	No	Lay	1915
Marietta 15,300—Washington							
Marietta Hospital[3]	Gen	35	16	Indiv	No	M D	1904
Tremont Hospital	Gen	15	9	Indiv	No	M.D	1920
Marion 33 400—Marion							
Marion City Hospital	Gen	40	22	City	No	R N	1920
Sawyer Sanatorium	N&M	50	38	Part	No	R.N	1895
Martins Ferry 15 800—Belmont							
Martins Ferry Hospital▲	Gen	70	48	Indep	Yes	R N	1906
Marysville 3 635—Union							
King's Daughters Hospital	Gen	10	5	Church	No	R.N	1925
Ohio Reformatory for Women[2]	Gen	18	12	State	No	Lay	1916
Massillon 26 700—Stark							
Massillon Hospital▲	Gen	92	67	Indep	Yes[1]	Lay	1909
Masillon State Hospital+	N&M	2 370	2 301	State	Yes[1]	M.D	1898
McConnelsville 1 618—Morgan							
Rocky Glen Sanatorium	TB	75	72	Indep	No	Lay	1911
Middletown 31 900—Butler							
Middletown Hospital▲	Gen	81	39	Indep	Yes[1]	R.N	1916
Montpelier 3 052—Williams							
Wertz Hospital	Gen	10	4	Indiv	No	M D	1910
Mt. Vernon 9 237—Knox							
Hinde Ball Mercy Hospital	Gen	25	12	Church	No	Lay	1919
Mt Vernon Hospital Sanitarium	Gen	40	20	Indiv	Yes	R N	1901
Ohio State Sanatorium	TB	230	222	State	No	M D	1909
Munroe Falls 275—Summit							
Summit County Home Hospital	Gen	50	30	County	No	Lay	1914
Napoleon 4 132—Henry							
S M Heller Memorial Hospital	Gen	12	8	City	No	R.N	1920
National Military Home Montgomery							
National Military Home Hospital▲	Gen	1 095	743	Fed	No	M D	1869
Newark 30 600—Licking							
Newark City Hospital▲	Gen	41	20	Indep	Yes[1]	R N	1914
Samaritan Hospital	Gen	23	13	Indiv	Yes	R N	1901
New London 1 470—Huron							
New London Hospital	Gen	10	4	Indep	No	R.N	1921
Norwalk 7 379—Huron							
Norwalk City Hospital	Gen	24	12	Indep	No	R N	1917
Oberlin 4 236—Lorain							
Allen Hospital	Gen	25	13	Indep	No	R N	1925
Orient 255—Pickaway							
Orient Institution for Feeble Minded	N&M	2 282	1 594	State	No	M D	1900
Oxford 2 146—Butler							
Miami University Students Hospital & Dispensary	Gen	28	10	State	No	M D	1919
Oxford Retreat	N&M	28	28	Indep	No	M D	1843
Painesville 7 272—Lake							
Lake County Memorial Hospital	Gen	66	47	County	Yes[1]	Lay	1902
Perrysburg 2 429—Wood							
Rheinfrank Hospital	Goiter	12	10	Indiv	No	M.D	1897
Piqua, 16 200—Miami							
Ball Memorial Hospital	Gen	53	30	Indep	Yes[1]	R N	1905
Pt Clinton 3 926—Ottawa							
Pool Hospital	Gen	16	8	Indiv	No	M D	1906
Portsmouth 39 800—Sciota							
Hopedale Home	Mater	10	4	Indep	No	Lay	1914
Mercy Hospital	Gen	66	28	Church	Yes[1]	Lay	1921
Portsmouth General Hosp▲	Gen	90	31	City	Yes[1]	R N	1908
Schirrmann Hospital▲	Gen	30	16	Indiv	Yes[1]	R N	1920
St Clairsville 1,561—Belmont							
Belmont Sanatorium	TB	52	New	County	No	M D	1927

OHIO—Cont City Pop—County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt MD RN Lay	Year Est
Salem 11 200—Columbiana							
Central Clinic and Hospital	Gen	30	20	Indep	No	M D	
Salem City Hospital▲	Gen	50	30	Indep	Yes[1]	R N	1913
Sandusky 24 800—Erie							
Erie County Home Hospital[3]	Gen	35	26	County	No	Lay	
Good Samaritan Hospital ▲	Gen	54	48	Indep	Yes[1]	Lay	1910
Providence Hospital	Gen	50	28	Church	Yes[1]	R N	1904
Shelby 5 578—Richland							
Shelby Memorial Hospital	Gen	26	15	Indep	No	R N	1920
Somerset 1 339—Perry							
Lord Hospital	Gen	10	3	Part	No	M D	1926
South Euclid 1 695—Cuyahoga							
Rainbow Hospital for Crippled and Convalescent Children	Ortho	100	84	Indep	No	R N	1891
Springfield 70 200—Clark							
Clark County Children's Home -	Chil	7	1	County	No	Lay	1922
Clark County Tuberculosis Sanitarium	TB	50	34	County	No	M D	1923
Ohio Knights of Pythias Home[2]	Gen	16	5	Frat	No	Lay	1911
Ohio Rebekah Hospital	Gen	67	40	Frat	No	M D	1895
Rickly Memorial Hospital	Gen	225	72	Frat	No	Lay	1923
Springfield City Hospital★▲	Gen	106	99	City	Yes[1]	M D	1889
State Soldiers Home —— Erie							
Ohio Soldiers & Sailors Home Hospital -	Gen	200	110	State	No	M D	1888
Steubenville 32,600—Jefferson							
Gill Hospital	Gen	30	20	Indep	Yes	R N	1900
Ohio Valley Hospital	Gen	75	69	Indep	Yes[1]	Lay	1912
Tiffin 15 800—Seneca							
Kentucky Memorial Hosp	Chil	50	40	Indep	No	Lay	1897
Mercy Hospital	Gen	35	20	Church	No	Lay	1914
Toledo 295 200—Lucas							
Alter Eye Ear Nose and Throat Hospital	EENT	6	2	Indiv	No	M D	1924
City Isolation Hospital	Iso	30	4	City	No	Lay	1900
East Side Hospital	Gen	20	24	Indep	Yes	Lay	1909
Flower Hospital★▲	Gen	115	81	Church	Yes[1]	R N	1907
Lucas County Branch Hospital	Gen	95	54	County	No	Lay	1918
Lucas County Hospital★▲	Gen	358	280	County	Yes[1]	R.N	1898
Lucas County Tuberculosis Hospital	TB	152	117	County	No	R N	1912
Maternity and Children's Hospital▲	Chil Mater	150	43	Indep	Yes[1]	Lay	1883
Mercy Hospital★▲	Gen	101	77	Church	Yes[1]	R N	1918
Robinwood Hospital▲	Gen	69	55	Church	Yes[1]	Lay	1898
St Vincent's Hospital ★▲	Gen	350	242	Church	Yes[1]	R N	1855
Toledo Hospital★▲	Gen	110	96	Indep	Yes[1]	Lay	1876
Toledo Sanitarium	N&M	31	7	Indep	No	M D	1910
Toledo State Hospital+	N&M	2 075	2 031	State	Yes	M D	1886
Troy 7 260—Miami							
Coleman's Hospital	Gen	12	5	Indiv	No	Lay	1911
McCullough's Private Hospital	Gen	9	6	Indiv	No	M D	1917
Urbana 7 621—Champaign							
Champaign County Hosp	Gen	19	14	County	Yes	Lay	1914
Van Wert 8 100—Van Wert							
Van Wert County Hospital	Gen	37	18	County	Yes[1]	R N	1916
Wadsworth 4 7 2—Medina							
Wadsworth Municipal Hosp	Gen	25	14	City	No	R N	1921
Warren 36 100—Trumbull							
St Joseph's Riverside Hospital	Gen	40	38	Church	No	R N	1922
Warren City Hospital▲	Gen	70	54	Indep	Yes[1]	R N	1907
Warrensville 150—Cuyahoga							
Cleveland City Infirmary	Gen	85	82	City	No	Lay	1903
Cleveland Municipal Tuberculosis Sanatorium	TB	580	557	City	No	M D	1905
West Dover 309—Cuyahoga							
Cedarcrest Sanitarium	N&M	35	24	Indiv	No	Lay	1919
Wilberforce 324—Greene							
Tawawa Hospital of Wilberforce University -	Gen	11	3	State	No	M D	1918
Willard 3 889—Huron							
Willard Community Hosp	Gen	20	12	City	No	R N	1915
Wilmington 5 037—Clinton							
Dr Kelley Hale Surgical Hospital	Gen	17	7	Indiv	No	M D	1915
Wooster 8 204—Wayne							
Hygeia Hall	Gen	25	New	Indep	No	M D	1927
Kinney and Knestrick Hospital	Gen	30	15	Indep	Yes	M D	1908
Wooster Hospital	Gen	30	15	Indiv	No	R N	1906
Worthington 705—Franklin							
Columbus Rural Rest Home	N&M	35	24	Indep	No	Lay	191
Xenia 9 110—Greene							
Espey Hospital	Chil	10	7	Indiv	No	R N	1915
McClellan Hospital	Gen	14	12	Indiv	No	M D	1898
Ohio Soldiers and Sailors Orphans Home Hospital -	Gen	65	26	State	No	Lay	1870
Youngstown 164 700—Mahoning							
Mahoning Tuberculosis Sanatorium	TB	74	72	County	No	M D	1924
St Elizabeth's Hospital★▲	Gen	175	129	Church	Yes[1]	Lay	1911
Youngstown Hospital★▲	Gen	249	224	Indep	Yes[1]	Lay	1882
Youngstown Municipal Hospital	Iso	65	8	City	No	R N	1924
Zanesville 30 600—Muskingum							
Bethesda Hospital▲	Gen	155	58	Church	Yes[1]	R N	1883
Good Samaritan Hospital▲	Gen	145	50	Church	Yes[1]	Lay	1900

Total registered hospitals in Ohio 293 capacity 42,955 average census 35 602 Hospitals not admitted to the register 25 capacity 389

OKLAHOMA City Pop—County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt MD RN Lay	Year Est
Ada 8 012—Pontotoc							
Ada Hospital	Gen	25	6	Indiv	No	R N	1923
Breco's Hospital	Gen	25	11	Indep	Yes	M D	1923
Altus 4 498—Jackson							
City Hospital	Gen	15	8	City	No	R N	1921
Alva 3 912—Woods							
Alva Hospital	Gen	15	6	City	No	Lay	1911
Ardmore 17 700—Carter							
Hardy Sanitarium	Gen	32	15	Indiv	Yes[1]	Lay	1914
Von Keller Hospital	Gen	30	18	Indep	Yes	M D	1917
Bartlesville 20 000—Washington							
Washington County Memorial Hospital	Gen	50	25	County	Yes[1]	R N	1922
Blackwell 7,174—Kay							
Blackwell Hospital[3]	Gen	35	15	Indiv	No	R N	1913
Leslie Sanatorium	Gen	16	12	Indiv	No	R N	1926
Bristow, 3 460—Creek							
Bristow General Hospital	Gen	18	8	Part	No	R N	1921
Butler 332—Custer							
Sunnyside Hospital	Gen	10	3	Part	No	Lay	1921
Cherokee 2 017—Alfalfa							
Masonic Hospital	Gen	28	18	Frat	Yes[1]	R N	1918
Chickasha 10 179—Grady							
Chickasha Hospital	Gen	45	15	Part	Yes[1]	Lay	1912
Cottage Hospital	Gen	32	20	Indiv	Yes	R N	1919
General Hospital	Gen	20	5	Indep	No	R N	1925
Chilocco —— Kay							
Chilocco Indian School Hospital	Gen	50	15	Indian	Yes	Lay	1884
Clinton 2 593—Custer							
Clinton Hospital	Gen	34	19	Indep	Yes[1]	M D	1911
Western Oklahoma State Tuberculosis Sanatorium	TB	140	120	State	No	M D	1922
Colony 415—Washita							
Segar Indian School Hosp	Gen	13	1	Indian	No	Lay	1885
Concho 290—Canadian							
Cheyenne and Arapaho Hospital	Gen	72	20	Indian	No	M D	1914
Cordell 1 855—Washita							
Florence Hospital	Gen	30	12	Indiv	No	Lay	1909
Cushing 6 376—Payne							
Cushing Hospital	Gen	26	12	Part	No	R N	1923
Davenport 440—Lincoln							
Nickell Hospital	Gen	10	4	Indiv	No	M D	1926
Depew 1 025—Creek							
Coppedge Hospital	Gen	12	7	Indiv	No	M D	1923
Drumright 6 460—Creek							
Drumright Hospital	Gen	12	8	Indep	No	R N	1922
Duncan 3 463—Stephens							
Ruth Hospital	Gen	21	12	Indiv	No	R.N	1922
Weedn Hospital	Gen	40	20	Indiv	Yes	R N	1920
Elk City 2 814—Beckham							
Standifer Hospital	Gen	20	13	Indiv	No	Lay	1918
Tisdal Hospital	Gen	35	15	Indiv	Yes[1]	Lay	1924
El Reno 7 737—Canadian							
Catto Hospital	Gen	25	14	Indiv	No	G N	1920
El Reno Sanitarium	Gen	60	24	Indep	Yes[1]	R N	1902
Enid 18 400—Garfield							
Enid General Hospital	Gen	87	62	Indep	Yes[1]	R N	1914
Enid Springs Sanitarium and Hospital	Gen	35	23	Indiv	Yes[1]	R N	1914
Oklahoma Institution for the Feebleminded	Fe Mi	550	556	State	No	Lay	1910
University Hospital	Gen	50	16	Indiv	Yes[1]	R N	1908
Erick 971—Beckham							
Erick Hospital	Gen	25	15	Indep	Yes	M D	1925
Eufaula 2 286—McIntosh							
Eufaula Indian School Hospital	Gen	11	3	Indian	No	Lay	1914
Fairfax 1 342—Osage							
Fairfax Hospital	Gen	20	9	Indep	No	Lay	1916
Ft Reno (El Reno P O)—Canadian							
Station Hospital	Gen	12	5	Army	No	M D	1874
Ft Sill 2 030—Comanche							
Station Hospital	Gen	100	75	Army	No	M D	1873
Frederick 3 822—Tillman							
Frederick Hospital	Gen	12	6	Part	No	M D	1922
Tillman County Hospital	Gen	15	7	Part	No	R N	1924
Grandfield 1 990—Tillman							
Grandfield Hospital	Gen	21	8	Part	No	M D	1912
Guthrie 11 813—Logan							
Duke Sanitarium	N&M	85	22	Indep	No	M D	1909
Oklahoma Methodist Episcopal Hospital	Gen	35	25	Church	Yes[1]	Lay	1906
Park Sanitarium	Gen	20	7	Indiv	No	M D	1913
Henryetta 5 889—Okmulgee							
Henryetta Hospital	Gen	35	15	Indep	Yes[1]	R N	1910
Hobart 2 936—Kiowa							
Hobart Hospital	Gen	20	15	Indiv	No	M D	1906
Miles Sanitarium	Gen	12	5	Indiv	No	Lay	1920
Holdenville 7 500—Hughes							
Keystone Hospital	Gen	20	12	Part	No	Lay	1926
Hominy 2 875—Osage							
Hominy Hospital	Gen	15	6	City	No	R N	1925
Lawton 8 930—Comanche							
Kiowa Indian Hospital	Gen	50	30	Indian	No	M D	1916
Southwestern Hospital	Gen	25	12	Part	Yes[1]	M D	1910
Mangum 3 405—Greer							
Border Hospital	Gen	35	16	Part	Yes[1]	R N	1900
McAlester 12,095—Pittsburg							
Albert Pike Hospital	Gen	50	26	Frat	Yes[1]	R N	1895
Oklahoma State Prison Hospital -	Gen	38	15	State	No	M D	1910
St Mary's Infirmary	Gen	20	4	Church	No	R N	1914
Miami 6 802—Ottawa							
Miami Baptist Hospital	Gen	30	10	Church	Yes[1]	Lay	1919
Muskogee 32,500—Muskogee							
Oklahoma Baptist Hospital	Gen	64	52	Church	Yes[1]	Lay	1909
Oklahoma School for the Blind	Gen	12	3	State	No	Lay	1911

OKLAHOMA—Cont City, Pop—County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt M D R N Lay	Year Est
Dr Tilly's Hospital	Gen	31	15	Indiv	No	Lay	1912
United States Veterans Hospital No 90▲	Gen	450	350	VetBur	No	M D	1923
Norman 5 001—Cleveland							
Central Oklahoma State Hospital	N&M	1 700	1 740	State	Yes[1]	M D	1895
Students Infirmary, University of Oklahoma[2]	Gen	26	6	State	No	Lay	1920
Okeene 1 084—Blaine							
Masonic Hospital	Gen	12	8	Frat	No	R N	1914
Oklahoma City 91,295—Oklahoma							
Farm Sanatorium	TB	32	18	Indiv	No	R.N	1923
Great Western Hospital	Gen	50	25	Indep	No	R N	1925
Holmes Home of Redeeming Love	Mater	14	8	Church	Yes	Lay	1900
McBride Reconstruction Hospital	Ortho	20	15	Part	No	Lay	1924
Oklahoma City General Hospital	Gen	40	35	Indep	Yes	Lay	1914
Oklahoma Cottage Sanatorium	TB	30	20	Indiv	No	R N	1915
Oklahoma Union Soldiers Home	Gen	31	21	State	No	Lay	1918
Postelle-Lackey Clinic	Gen	45	20	Part	No	R.N	1919
Rolater Hospital	Gen	54	35	Indiv	No	R.N	1906
St Anthony's Hospital★▲	Gen	156	150	Church	Yes[1]	Lay	1899
State University Hosp★+▲	Gen	264	228	State	Yes[1]	M.D	1911
Wesley Hospital▲	Gen	110	80	Indep	Yes[1]	Lay	1910
Okmulgee 26 600—Okmulgee							
Okmulgee City Hospital	Gen	60	27	City	Yes[1]	Lay	1918
Pauls Valley 5 694—Garvin							
Pauls Valley Sanitarium	Gen	15	8	Indiv	No	R N	1917
Pawhuska 6 414—Osage							
Pawhuska Municipal Hosp	Gen	37	18	City	Yes	R N	1923
Picher 9 676—Ottawa							
American Hospital	Gen	40	10	Indiv	Yes	M D	1920
Picher Hospital	Gen	23	9	Indiv	No	R.N	
Ponca City 7 051—Kay							
Grand Avenue Hospital	Gen	18	New	Indiv	No	Lay	1927
Ponca City Hospital▲	Gen	60	43	Church	Yes[1]	Lay	1920
Pryor 1 767—Mayes							
Whitaker State Orphan Home[2]	Chil	24	10	State	No	Lay	1897
Sand Springs 4 076—Tulsa							
Home Hospital	Gen	45	23	Indiv	Yes[1]	R.N	1916
Sapulpa 14 600—Creek							
Sapulpa City Hospital	Gen	20	5	City	No	R.N	1920
Shattuck, 1 395—Ellis							
Shattuck Hospital	Gen	15	15	Part	No	R N	1921
Shawnee 17 300—Pottawatomie							
Drs Anderson Carson and Hughes Hospital	Gen	28	New	Part	No	Lay	1927
Shawnee City Hospital	Gen	80	58	City	Yes	R.N	1905
Shawnee Sanatorium	TB	80	40	Indian	No	M D	1924
Stillwater 4 701—Payne							
Stillwater Hospital	Gen	20	10	Indiv	No	M D	1911
Sulphur 3 684—Murray							
Soldiers Tubercular Sanat	TB	100	44	State	No	M D	1922
Williamson Hospital Clinic	Gen	24	12	Indiv	No	M D	1921
Supply 231—Woodward							
Western Oklahoma Hosp	N&M	835	705	State	No	M D	1908
Tahlequah 2 271—Cherokee							
Sequoyah Orphans Training School[2]	Chil	12	8	Indian	No	Lay	1925
Talihina 690—Le Flore							
Choctaw Chickasaw Hosp	TB	60	54	Indian	No	M D	1916
Eastern Oklahoma State Tuberculosis Sanatorium	TB	100	112	State	No	M D	1921
Thomas 1 223—Custer							
Thomas Hospital	Gen	20	5	Indiv	No	Lay	1915
Tonkawa 1 448—Kay							
Stricklen Hospital	Gen	33	9	Indiv	No	M.D	1923
Tulsa 135 900—Tulsa							
Flower Hospital	Gen	23	18	Indep	No	R N	1925
Maurice Willows Hospital	Gen	20	8	Indep	Yes	Lay	1922
Morningside Hospital▲	Gen	65	48	Indiv	Yes[1]	R.N	1918
Oklahoma Hospital▲	Gen	52	29	Indiv	Yes[1]	M D	1915
Oklahoma Indian Sanit	Gen	30	20	Indiv	No	Lay	1923
St John's Hospital▲	Gen	165	139	Church	Yes[1]	R.N	1926
Vinita 5 010—Craig							
Eastern Oklahoma Hosp	N&M	1 450	1 445	State	No	M.D	1913
Watonga 1 678—Blaine							
Watonga Hospital	Gen	16	5	Indiv	No	Lay	1923
Waurika 3 204—Jefferson							
Waurika Hospital	Gen	16	12	Indiv	No	M D	1925
Wilson, 2,286—Carter							
Wilson Hospital	Gen	16	5	Indiv	No	M D	1918
Woodward, 3 849—Woodward							
Woodward General Hosp	Gen	20	12	Indep	Yes[1]	R N	1916

Total registered hospitals in Oklahoma 111 capacity 9 185 average census 7,373 Hospitals not admitted to the register 16 capacity 190

OREGON City, Pop—County	Type of Service	Beds	Aver Pts	Control	Nu. Tr Sch	Supt M D R.N Lay	Year Est
Albany 4,810—Linn							
Albany General Hospital	Gen	30	20	Indep	No	R.N	1924
Ashland 4 283—Jackson							
Community Hospital	Gen	22	10	City	No	Lay	1909
Astoria 17 000—Clatsop							
Clatsop County Hospital and Home[2]	Gen	10	4	County	No	Lay	1914
St. Mary's Hospital▲	Gen	75	58	Church	Yes[1]	Lay	1880
Baker 7 729—Baker							
Baker County Protestant Hospital	Gen	20	15	Church	No	R.N	1924
St. Elizabeth's Hospital	Gen	60	27	Church	Yes[1]	Lay	1897
Bandon 1 440—Coos							
Leep Hospital	Gen	10	5	Indiv	No	R N	1926
Bend 5 415—Deschutes							
Lumbermen's Hospital	Indus	20	8	Indus	No	Lay	1919
St Charles Hospital	Gen	30	10	Church	No	R N	1915
Burns 1 022—Harney							
Valley View Hospital	Gen	11	7	Part	No	Lay	1924
Chemawa 625—Marion							
Salem Indian School Hosp	Gen	30	25	Indian	Yes	M D	1885
Corvallis 5 752—Benton							
Anderson Surgical Hospital	Gen	20	15	Indiv	No	M D	1914
Oregon Agricultural College Hospital	Gen	14	5	Indep	No	M D	1920
Dallas 2 527—Polk							
Dallas Hospital	Gen	16	8	Indep	No	R N	1914
Enterprise 1,895—Wallowa							
Enterprise Hospital	Gen	12	3	Indep	No	M D	1920
Eugene 11 500—Lane							
Eugene Hospital▲	Gen	60	35	Indep	Yes[1]	R N	1901
Pacific Christian Hospital▲	Gen	84	65	Church	Yes[1]	Lay	1924
Forest Grove, 1 775—Washington							
Via Hospital[2]	Gen	20	10	Indiv	No	R.N	1924
Grants Pass 3 161—Josephine							
Good Samaritan Hospital	Gen	15	4	Indiv	No	Lay	1912
Heppner 1 324—Morrow							
Morrow General Hospital	Gen	16	4	Indiv	No	R.N	1926
Hood River 3 195—Hood River							
Hood River Hospital	Gen	17	7	Indep	No	R N	1905
Klamath Agency 163—Klamath							
Klamath Reservation Hosp	Gen	25	New	Indian	No	M D	1927
Klamath Falls 4 801—Klamath							
Klamath General Hospital	Gen	28	19	Indep	No	Lay	1911
Klamath Valley Hospital	Gen	26	20	Indiv	No	M.D	1920
La Grande 6 913—Union							
Grande Ronde Hospital	Gen	55	32	Indep	No	M D	1907
Lakeview 1 139—Lake							
Lakeview Public Hospital	Gen	10	4	Indep	No	R N	1913
Marshfield 4 034—Coos							
Wesley Hospital	Gen	35	18	Church	No	R N	1925
McMinnville 2 400—Yamhill							
McMinnville Hospital	Gen	21	14	Indiv	No	M D	1922
Medford 13 304—Jackson							
Community Hospital	Gen	25	9	Indep	No	M D	1922
Sacred Heart Hospital▲	Gen	55	30	Church	Yes[1]	Lay	1911
Milwaukie 1 172—Clackamas							
Portland Open Air Sanat	TB	77	70	Indep	No	R.N	1905
Myrtle Point 934—Coos							
Community General Hosp	Gen	14	3	Indiv	No	Lay	1926
Mast and Wilson Hospital	Gen	14	10	Part	No	R N	1926
Newberg 2 566—Yamhill							
Newberg Hospital	Gen	7	3	Indiv	No	Lay	1914
Dr Wendt's Hospital	Gen	6	3	Indiv	No	M.D	1924
North Bend 3 268—Coos							
Keizer Brothers Hospital	Gen	60	26	Part	No	R.N	1922
Mercy Hospital	Gen	60	8	Church	No	Lay	1905
Ontario 2,039—Malheur							
Holy Rosary Hospital	Gen	40	25	Church	Yes[1]	R.N	1911
Oregon City 5 686—Clackamas							
Oregon City Hospital▲	Gen	47	37	Indep	No	R N	1910
Oswego 1 818—Clackamas							
Christie Home for Orphan Girls[2]	Chil	22	6	Church	No	Lay	1907
Pendleton 7 387—Umatilla							
Eastern Oregon State Hosp	N&M	972	926	State	No	M D	1913
St Anthony's Hospital	Gen	88	60	Church	Yes[1]	R N	1902
Portland 282,383—Multnomah							
Boys and Girls' Aid Society of Oregon	Chil	6	2	Indep	No	Lay	1885
Children's Home[2]	Chil	8	3	Indep	No	R N	1861
City of Portland Emergency Hospital	Gen	12	15	City	No	M D	1912
Derr Sanitarium	Gen	18	8	Indiv	No	Lay	1916
Doernbecher Memorial Hospital for Children of the University of Oregon Medical School	Chil	63	50	State	No	R.N	1926
Evers Sanitarium	Mater	16	5	Indiv	No	Lay	1922
Emanuel Hospital★▲	Gen	210	120	Church	Yes[1]	Lay	1913
Florence Crittenton Refuge Home	Mater	12	4	Indep	No	Lay	1897
Good Samaritan Hospital★▲	Gen	319	262	Church	Yes[1]	R.N	1874
Dr House's Sanatorium	N&M	18	15	Indiv	No	M D	1912
Isolation Hospital	Iso	70	24	City	No	M.D	1921
Louise Home	Mater	50	45	Indep	No	Lay	1907
Morningside Hospital	N&M	268	146	Federal	No	M.D	1904
Mountain View Sanitarium	N&M	22	18	Indep	No	M D	1908
Multnomah County Hospital★▲	Gen	200	178	County	Yes[1]	R.N	1909
Oregon Sanitarium	Gen	12	3	Indiv	No	M.D	1910
Portland Eye Ear Nose and Throat Hospital	EENT	35	18	Indiv	No	R.N	1919
Portland Maternity Hosp	Mater	16	10	Indep	No	Lay	1904
Portland Medical Hospital	Gen	35	34	Indiv	No	R N	1910
Portland Sanitarium★▲	Gen	102	79	Church	Yes[1]	Lay	1901
Portland Surgical Hospital▲	Gen	84	52	Indep	No	Lay	1915
Resthaven Sanitarium	Conv	6	3	Part	No	Lay	1912
St Vincent's Hospital★▲	Gen	364	342	Church	Yes[1]	Lay	1875
Salvation Army White Shield Home	Mater	21	9	Church	No	Lay	1898
Shriners Hospital for Crippled Children+▲	Ortho	50	53	Frat	No	R.N	1924
United States Veterans Hospital No 77▲	Gen	146	145	VetBur	No	M.D	1921
Waverleigh Sanatorium[3]	Conv	10	3	Indep	No	R.N	1904
West Hills Sanatorium	TB	8	5	Indiv	No	R.N	1925
Woman's Convalescent Home	Conv	7	4	Indep	No	Lay	1925
Woman's Hospital	Mater	34	12	Indiv	No	R N	1918
Roseburg 4 381—Douglas							
Mercy Hospital	Gen	25	15	Church	No	Lay	1909
Oregon Soldiers Home[2]	Gen	50	35	State	No	M D	1894

OREGON—Cont

City Pop —County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt M D R N Lay	Year Est
St Helens 2 220—Columbia							
St Helens General Hospital	Gen	20	10	Indep	No	R N	1925
Salem 20 100—Marion							
Bungalow Maternity Home	Mater	8	3	Indiv	No	Lay	1924
Oregon State Hospital	N&M	1 900	1 845	State	No	M D	1881
Oregon State Institution for Feebleminded	FeMi	900	805	State	No	M D	1908
Oregon State Penitentiary -	Gen	100	5	State	No	M D	
Oregon State School for the Deaf "	Gen	8	2	State	No	Lay	1870
Oregon State Training School -	Gen	12	4	State	No	Lay	1890
Oregon State Tuberculosis Hospital	TB	190	185	State	No	M D	1910
Salem Deaconess Hospital[3]	Gen	90	50	Church	No	Lay	1918
Salem Hospital	Gen	92	60	Indep	Yes[1]	R N	1896
Willamette Sanatorium[7]	Gen	30	16	Indiv	No	M D	1900
Silverton 2,251—Marion							
Silverton Hospital	Gen	20	7	Indep	No	R N	1918
The Dalles 5 807—Wasco							
The Dalles Hospital	Gen	80	50	Indep	Yes[1]	Lay	1901
Mid Columbia Hospital	Gen	21	15	Part	No	R N	1924
Tillamook 1 930—Tillamook							
Boals Hospital	Gen	45	20	Indiv	No	M D	1909
Tillamook General Hospital	Gen	16	1	Indiv	No	R.N	1918
Toledo 678—Lincoln							
Lincoln Hospital	Indus	20	12	Indus	No	R N	1925
Troutdale 191—Multnomah							
Multnomah County Tuberculosis Pavilion	TB	36	30	County	No	R N	1913
Wallowa 894—Wallowa							
Wallowa Hospital	Gen	8	5	Indiv	No	M D	1909

Total registered hospitals in Oregon 93 capacity 8 169 average census 6 540 Hospitals not admitted to the register 7 capacity 2,2

PENNSYLVANIA

City, Pop —County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt M D R N Lay	Year Est
Abington 821—Montgomery							
Abington Memorial Hosp ★▲	Gen	130	83	Indep	Yes[1]	Lay	1914
Adamsburg 246—Westmoreland							
Adamsburg Health Home	Conv	12	8	Indiv	No	M D	1923
Allentown, 94 600—Lehigh							
Allentown Hospital ★▲	Gen	225	179	Indep	Yes[1]	Lay	1899
Allentown State Hospital ✚	N&M	1,302	1 823	State	Yes[1]	M D	1912
Baer Hospital	Gen	20	10	Indiv	No	M D	1920
Sacred Heart Hospital ★▲	Gen	189	128	Church	Yes[1]	R N	1916
Allenwood 362—Union							
Devitt s Camp for Tuberculosis ✚	TB	150	135	Indep	No	M D	1912
Altoona 67 000—Blair							
Altoona Hospital ★▲	Gen	162	108	Indep	Yes[1]	Lay	1883
Mercy Hospital ▲	Gen	115	65	Indep	Yes[1]	R.N	1910
Andalusia 500—Bucks							
Jewish Convalescent Home	Conv	25	25	Indep	No	Lay	1920
Ardmore 10 075—Montgomery							
Wood Lea Sanitarium	N&M	15	14	Indiv	No	M D	1908
Ashland 6 064—Schuylkill							
State Hospital ▲	Gen	226	155	State	Yes[1]	Lay	1879
Beaver Falls 13 200—Beaver							
Providence Hospital ▲	Gen	54	42	Church	Yes[1]	R.N	1909
Bedford 2,330—Bedford							
Timmins' Hospital	Gen	10	New	Indiv	No	M D	1927
Bellefonte 3 996—Center							
Center County Hospital	Gen	60	20	Indep	Yes	R N	1902
Bellevue 8,198—Allegheny							
Salvation Army Home and Hospital	Mater	8	4	Church	No	Lay	1900
Suburban General Hospital▲	Gen	110	70	Indep	Yes[1]	R N	1904
Berwick 14 300—Columbia							
Berwick Hospital	Gen	40	35	Indep	Yes	Lay	1913
Bethlehem 64 400—Northampton							
Bethlehem Steel Company s Emergency Hospital	Indus	5	1	Indus	No	M D	1915
St. Luke s Hospital ★▲	Gen	184	129	Indep	Yes[1]	Lay	1873
Bloomsburg 7 819—Columbia							
Bloomsburg Hospital	Gen	52	33	Indep	Yes	R N	1905
Blossburg 2 033—Tioga							
Blossburg State Hospital	Gen	82	49	State	Yes	M D	1890
Braddock, 21 900—Allegheny							
Braddock General Hosp ★▲	Gen	115	73	Indep	Yes[1]	R N	1906
Bradford 15 800—McKean							
Bradford Hospital ▲	Gen	100	63	Indep	Yes[1]	R N	1885
Brookville 3,272—Jefferson							
Brookville Hospital	Gen	35	23	Indep	Yes	R N	1919
Broomall 125—Delaware							
Convalescent Hospital and Holiday House	Conv	30	18	Frat	No	R N	1919
Brownsville 2 502—Fayette							
Brownsville General Hosp	Gen	90	65	Indep	Yes	R N	1916
Bryn Mawr 3 000—Montgomery							
Bryn Mawr College Infirm[2]	Gen	14	4	Indep	No	M D	1893
Bryn Mawr Hospital ★▲	Gen	116	104	Indep	Yes[1]	M D	1893
Butler 25 500—Butler							
Butler County Mem Hosp	Gen	92	47	Indep	Yes[1]	R N	1897
Cambridge Springs 1 663—Crawford							
Logan s Hospital	Gen	10	5	Indiv	No	R N	1906
Canonsburg 14 000—Washington							
Canonsburg General Hosp	Gen	44	24	Indep	Yes	R N	1904
Carbondale 19 700—Lackawanna							
Carbondale General Hosp	Gen	65	51	Indep	Yes	Lay	1889
St Joseph s Hospital	Gen	50	35	Church	Yes	Lay	1926
Carlisle 11 500—Cumberland							
Carlisle Hospital	Gen	50	22	Indep	No	R N	1916
Cumberland County Home[3]	N&M	95	70	County	No	Lay	
Station Hospital	Gen	54	10	Army	No	M D	1918
Chambersburg 14 100—Franklin							
Chambersburg Hospital	Gen	90	33	Cy&Co	Yes	Lay	1904

PENNSYLVANIA—Cont

City Pop —County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt M D R N Lay	Year Est
Wilson College for Women Infirmary "	Gen	10	2	Indep	No	R N	1870
Chester 70 400—Delaware							
Chester Hospital ★▲	Gen	250	110	Indep	Yes	Lay	1883
J Lewis Crozer Home for Incurables and Homeopathic Hospital ▲	Gen	85	40	Indep	Yes[1]	R N	1900
Clarks Summit 1 404—Lackawanna							
Hillside Hospital for Mental Diseases	N&M	800	684	City	Yes	M D	1863
Clearfield 8 529—Clearfield							
Clearfield Hospital ▲	Gen	99	70	Indep	Yes[1]	R N	1901
Stewart Clinic Hospital	Gen	23	17	Indep	No	R N	1925
Clifton Heights 3 469—Delaware							
Burn Brae Hospital	N&M	50	48	Indiv	No	M D	1908
Coaldale 6 336—Schuylkill							
Coaldale State Hospital	Gen	51	54	State	No	M D	1910
Coatesville 16 800—Chester							
Coatesville Hospital	Gen	50	35	Indep	Yes[1]	R N	1902
Columbia 10 836—Lancaster							
Columbia Hospital	Gen	65	25	Indep	Yes	R N	1895
Colver 2,060—Cambria							
Colver Hospital	Indus	18	5	Indus	No	M D	1912
Concordville 400—Delaware							
Darlington Sanitarium[3]	N&M	10	8	Indiv	No	M D	1894
Confluence 1 031—Somerset							
Frantz Hospital	Gen	15	8	Indiv	No	M D	1914
Connellsville 14 400—Fayette							
State Hospital	Gen	32	30	State	No	Lay	1891
Conshohocken 8 481—Montgomery							
Innwood Sanitarium	N&M	25	20	Indiv	No	M D	1898
Corry 7 228—Erie							
Corry Hospital	Gen	42	31	Indep	Yes	R N	1891
Coudersport, 2,836—Potter							
Coudersport General Hosp	Gen	15	10	City	No	R N	1920
Cresson, 2 170—Cambria							
Pennsylvania State Sanat for Tuberculosis No 2 ✚	TB	700	685	State	Yes	M D	1913
Danville 6 952—Montour							
Geo F Geisinger Memorial Hospital ★▲	Gen	148	126	Indep	Yes[1]	M D	1915
State Hospital	N&M	1 650	1 660	State	Yes[1]	M D	18 2
Darby 7 922—Delaware							
St Francis Country House for Convalescents and St Francis Hall for Incurables	Incur Conv	45	41	Church	No	Lay	1913
Devon 364—Chester							
Eliza Cathcart Home	Incur	5	37	Church	No	Lay	1893
Dixmont 1,200—Allegheny							
Dixmont Hospital for Insane	N&M	1 040	1 051	Indep	Yes[1]	M D	1856
Dixonville 550—Indiana							
Two Licks Hospital	Gen	28	12	Indep	No	R N	1908
Du Bois, 14 400—Clearfield							
Du Bois Hospital ▲	Gen	50	24	Church	Yes[1]	R N	1890
Maple Avenue Hospital▲	Gen	64	33	Indep	Yes[1]	Lay	1919
Eagleville 184—Montgomery							
Eagleville Sanatorium for Consumptives	TB	200	130	Indep	Yes	R N	1909
Easton 37 400—Northampton							
Betts Private Hospital	Gen	45	28	Indiv	No	M D	1919
Childrens Home[2]	Chil	10	1	Indep	No	Lay	1885
Easton Hospital ▲	Gen	110	98	Indep	Yes[1]	M D	1890
Easton Sanitarium	Conv	30	20	Indiv	No	M D	1925
East Stroudsburg 5 278—Monroe							
General Hospital	Gen	39	12	Indep	No	R N	1915
Ebensburg 2,179—Cambria							
Cambria County Almshouse and House of Employment "	Incur	35	35	County	No	M D	1857
Elizabethtown 3 319—Lancaster							
Philadelphia Freemasons Memorial Hospital of Masonic Homes[3]	Gen	110	75	Frat	No	Lay	1916
Ellwood City 8,958—Lawrence							
Ellwood City Hospital	Gen	25	10	Indep	No	R.N	1913
Elwyn 162—Delaware							
Elwyn Training School	N&M	1 045	963	Indep	No	M D	1852
Embreeville 147—Chester							
Chester County Hospital for Insane	N&M	346	340	County	No	M D	1900
Emsworth 2 165—Allegheny							
Orphan Asylum of the Holy Family -	Chil	20	7	Church	No	Lay	1900
Erie 93 372—Erie							
Fisher Eye Ear Nose and Throat Hospital	EENT	30	10	Indiv	Yes	M D	1924
Hamot Hospital ★▲	Gen	185	139	Indep	Yes[1]	Lay	1880
Lakeview Hospital	Iso	75	30	City	No	Lay	1903
Louise Home the Sanatorium of the Erie County Anti Tuberculosis Society	TB	16	13	Indep	No	R N	1913
Pennsylvania Soldiers and Sailors Home Hospital -	Gen	70	35	State	No	R N	1885
St Joseph s Home for Children -	Chil	42	18	Church	No	Lay	1864
St Vincent s Hospital ★▲	Gen	184	143	Church	Yes[1]	Lay	1875
Farview (Waymart P O)—Wayne							
Fairview State Hospital	N&M	600	619	State	No	M D	1908
Franklin 9 970—Venango							
Franklin Hospital	Gen	47	15	Indep	No	R N	1902
Gettysburg 4 439—Adams							
Annie M Warner Hospital of Adams County ▲	Gen	54	24	Indep	No	R N	1919
Gibsonia 138—Allegheny							
St Barnabas Free Home	Incur	100	95	Church	No	Lay	1910
Girard 1 242—Erie							
Tuberculosis Sanatorium	TB	20	20	Cy&Co	No	R N	1927
Gladwyne 1 200—Montgomery							
Gladwyne Colony	N&M	70	60	Indiv	No	Lay	

PENNSYLVANIA—Cont City, Pop—County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt M D R N Lay	Year Est
Glenside 1 800—Montgomery							
Bramlett Kerr Sanatorium	Gen	8	2	Indiv	No	R.N	1924
Greensburg 16 900—Westmoreland							
Westmoreland Hospital ★▲	Gen	165	85	Indep	Yes[1]	R.N	1895
Greenville 8 101—Mercer							
Greenville Hospital	Gen	53	20	Indep	Yes[1]	R N	1907
Grove City 4 944—Mercer							
Grove City Hospital	Gen	26	14	Indep	No	R N	1907
Hamburg 2 764—Berks							
Hamburg State Sanatorium No 3 +	TB	450	415	State	No	M D	1914
Hanover 9 210—York							
Hanover General Hospital ▲	Gen	61	30	City	No	R N	1926
Harmarville 780—Allegheny							
Harmarville Convalescent Home	Conv	40	28	Indep	No	R N	1913
Harrisburg 84 600—Dauphin							
Harrisburg Hospital ★▲	Gen	214	146	Indep	Yes[1]	Lay	1873
Harrisburg Polyclinic Hospital ★▲	Gen	150	81	Indep	Yes	R N	1909
Harrisburg State Hospital +	N&M	1 105	1 463	State	No	M D	1851
Keystone Hospital[3]	Gen	21	18	Indiv	No	M D	1910
Hazleton 36 800—Luzerne							
Hazleton State Hospital ▲	Gen	125	93	State	Yes[1]	M D	1889
Hellwood 2 045—Indiana							
Bethlehem Mines Hospital	Indus	20	10	Indus	No	M D	1908
Hollidaysburg 4 071—Blair							
Blair County Hospital for Insane	N&M	335	316	County	No	M D	1898
Homestead 21 427—Allegheny							
Homestead Hospital ▲	Gen	106	65	Indep	Yes[1]	R N	1903
Honesdale 2,756—Wayne							
Wayne County Memorial Hospital	Gen	25	12	Indep	No	R N	1918
Huntingdon 7 051—Huntingdon							
J C Blair Memorial Hosp ▲	Gen	65	45	Indep	Yes[1]	R N	1911
Pennsylvania Industrial Reformatory[2]	Gen	20	6	State	No	Lay	1889
Idlewood 615—Allegheny							
St Paul's Roman Catholic Orphan Asylum of Pittsburgh	Chil	100	10	Church	No	Lay	1838
Indiana 7 043—Indiana							
Indiana Hospital ▲	Gen	81	64	Indep	Yes[1]	R.N	1915
Jersey Shore 6 103—Lycoming							
Jersey Shore Hospital	Gen	24	10	Part	Yes	Lay	1910
Dr F G Sanford's Private Hospital	Gen	12	2	Indiv	Yes	R N	1908
Johnstown 72,200—Cambria							
Barbara Salus Memorial Hospital	Dr&Al	13	5	Indiv	No	M D	1915
Cambria Steel Company Hospital ▲	Indus	65	25	Indus	No	R N	1887
Conemaugh Valley Memorial Hospital ★▲	Gen	417	184	Indep	Yes	Lay	1889
Lee Homeopathic Hosp ▲	Gen	23	13	Indep	No	M D	1916
Mendenhall Maternity Hosp	Mater	16	8	Indiv	Yes[1]	M D	1915
Mercy Hospital of Johnstown ▲	Gen	87	78	Church	Yes	R N	1910
Municipal Hospital	Iso	60	10	City	No	M D	1902
Kane 7 283—McKean							
Kane Summit Hospital ▲	Gen	80	30	Indep	Yes[1]	R N	1894
Kittanning 7 153—Armstrong							
Kittanning General Hosp	Gen	35	18	Indep	No	R N	1898
Lancaster 57,100—Lancaster							
Home for Friendless Children[2]	Chil	6	2	Indep	No	Lay	1850
Lancaster County Hospital and Hospital for Insane	N&M	38	30	Cy&Co	No	M D	1798
Lancaster General Hosp ★▲	Gen	162	131	Indep	Yes[1]	Lay	1893
Rosemere Sanatorium	TB	50	42	Indep	No	R.N	1925
St Joseph's Hospital ▲	Gen	170	130	Church	Yes[1]	Lay	1882
Lansdowne, 4 797—Delaware							
St Vincent's Home Infirmary[2]	Chil	41	14	Church	No	Lay	1920
Sanatorium School	Ortho	24	10	Indiv	No	Lay	1910
Latrobe 9 484—Westmoreland							
Latrobe Hospital	Gen	58	35	Indep	Yes	R.N	1911
Laurelton 327—Union							
Laurelton State Village	N&M	505	250	State	No	M D	1913
Lebanon 25,300—Lebanon							
Good Samaritan Hospital ▲	Gen	90	31	Indep	Yes[1]	R N	1891
Lebanon Sanatorium	Gen	25	20	Indep	No	M D	1903
Lewisburg 3,204—Union							
United Evangelical Home[2]	Gen	10	5	Church	No	Lay	1916
Lewistown 9 849—Mifflin							
Lewistown Hospital ▲	Gen	45	41	Indep	Yes	R.N	1908
Lock Haven 8,557—Clinton							
Lock Haven Hospital ▲	Gen	80	45	Indep	Yes[1]	R N	1897
Lock No 4 4,532—Washington							
Charleroi Monessen Hosp	Gen	28	20	Indep	No	R.N	1910
Loysville 400—Perry							
Tressler Orphans Home	Chil	30	1	Church	No	Lay	1868
Mayview — Allegheny							
Pittsburgh City Home and Hospitals ▲	Gen	2 790	2 700	City	Yes[1]	M D	1893
McKeesport 49,500—Allegheny							
McKeesport Hospital ★▲	Gen	160	136	Indep	Yes[1]	Lay	1894
McKees Rocks, 18 300—Allegheny							
Ohio Valley General Hosp ▲	Gen	60	45	Indep	Yes	R.N	1907
Meadville 15,800—Crawford							
Meadville City Hospital	Gen	51	24	Indep	Yes[1]	R N	1880
Spencer Hospital	Gen	65	28	Church	Yes[1]	Lay	1864
Media 4 109—Delaware							
Dermady Cottage Sanat	TB	25	25	Indiv	No	Lay	1903
Media Hospital[3]	Gen	20	15	Indiv	Yes	R.N	1910
Melcroft 18—Fayette							
Indian Creek Valley Hosp	Gen	20	8	Indiv	No	M D	1923
Mercer 1 932—Mercer							
Mercer Cottage Hospital[3]	Gen	15	20	Indiv	Yes	M D	1924
Mercer Sanitarium	N&M	44	20	Part	Yes[1]	M D	1900
Meyersdale 3 716—Somerset							
Hazel McGilvery Hospital	Gen	10	3	Indiv	No	M D	1922
Meyersdale Hospital	Gen	15	6	Indiv	No	M D	1921
Middletown 5 920—Dauphin							
Odd Fellows Home of Pennsylvania[2]	Gen	31	10	Frat	No	Lay	1874
Monaca, 3 838—Beaver							
Beaver County Sanatorium	TB	58	60	County	No	M D	1924
Monessen 21 800—Westmoreland							
Gemmill Hospital	EENT	14	12	Indiv	No	M D	1926
Monongahela 8 688—Washington							
Monongahela Memorial Hospital ▲	Gen	72	43	Indep	Yes	R N	1897
Montrose 1 691—Susquehanna							
Dr R B Mackey Private Hospital	EENT	5	2	Indiv	No	M D	1922
Morganza — Washington							
Pennsylvania Training Sch	Gen	15	5	State	No	Lay	1850
Mt Pleasant 5 862—Westmoreland							
Mt Pleasant Memorial Hospital	Gen	55	27	Indep	Yes	Lay	1902
Muncy 2,054—Lycoming							
Muncy Valley Private Hosp	Gen	21	10	Part	Yes	Lay	1923
Nanticoke 25 100—Luzerne							
State Hospital	Gen	89	65	State	Yes[1]	R N	1906
Nazareth 4 288—Northampton							
Northampton County Almhouse	Gen	75	20	County	No	Lay	1873
New Brighton 9 361—Beaver							
Beaver County Children's Home	Chil	10	2	Indep	No	Lay	1900
Beaver Valley General Hospital ▲	Gen	60	43	Indep	Yes[1]	Lay	1894
New Castle 50 700—Lawrence							
New Castle Hospital ▲	Gen	103	75	Church	Yes[1]	R N	1909
Shenango Valley Hospital	Gen	80	60	Indep	Yes	R N	1891
New Kensington 14 900—Westmoreland							
Citizens General Hospital ▲	Gen	85	60	Indep	Yes[1]	Lay	1912
Newtown Square 168—Delaware							
Dunwoody Home	Conv	42	26	Indep	No	R.N	1924
New Wilmington 856—Lawrence							
Overlook Sanitarium	Conv	35	20	Indep	No	M D	1911
Norristown, 35 300—Montgomery							
Montgomery Hospital ★▲	Gen	105	76	Indep	Yes[1]	R N	1889
Norristown State Hospital +	N&M	3 250	3 216	State	Yes	M D	1881
River View Private Hospital	Gen	17	7	Indiv	No	Lay	1917
Northampton 9 349—Northampton							
Haff Hospital	Gen	55	25	Indiv	Yes	M D	1916
North East 3 481—Erie							
St Barnabas House by the Lake	Incur	25	23	Church	No	Lay	1925
Oakbourne 32—Chester							
James C Smith Memorial Home	Conv	24	16	Church	No	Lay	1895
Pennsylvania Epileptic Hospital and Colony Farm	Epil	110	100	Indep	No	M D	1896
Oil City 22 000—Venango							
Grandview Sanatorium	TB	50	25	Indep	No	Lay	1904
Oil City Hospital	Gen	65	32	Indep	Yes	R.N	1893
Old Forge 12,800—Lackawanna							
Taylor Hospital	Gen	48	31	Indep	Yes	R N	1903
Olyphant 11 400—Lackawanna							
Blakely Home	N&M	123	118	Indep	No	Lay	1911
Palmerton 7 168—Carbon							
Palmerton Hospital ▲	Gen	57	56	Indep	Yes[1]	Lay	1905
Peckville 3 915—Lackawanna							
Mid Valley Hospital	Gen	42	31	Indep	Yes	R N	1903
Pennhurst — Chester							
Pennhurst State School +	N&M	1,200	1 220	State	No	M D	1908
Philadelphia 2 007 700—Philadelphia							
American Hospital for Diseases of the Stomach	Gen	40	28	Indep	Yes	R.N	1907
American Oncologic Hosp	Sk&Ca	40	16	Indep	No	Lay	1905
Anderson Hospital	Gen	76	46	Indep	No	M D	1917
Babies Hospital of Philadelphia	Gen	12	7	Indep	No	R N	1911
Belle Vista Sanatorium	N&M	75	75	Indiv	No	M D	
Belmont Hospital	Mater	12	4	Church	No	Lay	1893
Brown's Farm	Ortho	70	68	City	No	Lay	1916
Chester Avenue Private Hospital	Gen	9	4	Indiv	No	M D	1924
Chestnut Hill Hospital ★▲	Gen	112	80	Indiv	Yes[1]	R N	1903
Children's Heart Hospital	Cardiac	21	21	Indep	No	Lay	1923
Children's Homeopathic Hospital +▲	Chil	160	66	Indep	Yes[1]	Lay	1877
Children's Hospital of Philadelphia +▲	Chil	102	85	Indep	Yes[1]	R.N	1855
W L Clark Hospital	EENT	30	24	Indiv	No	M D	1923
Eastern State Penitentiary Hospital[2]	Gen	44	10	State	No	M D	1872
Englehardt Hospital	N&M	25	6	Indiv	No	M D	1922
Florence Crittendon Home	Mater	12	10	Indep	No	Lay	1898
Frankford Hospital ★▲	Gen	113	94	Indep	Yes[1]	R N	1903
Frederick Douglas Memorial Hospital ★▲[3]	Gen	78	50	Indep	Yes	M D	1895
Friends Hospital +	N&M	100	175	Indep	Yes[1]	M D	1813
Garretson Hospital	Gen	38	25	Indep	No	R.N	1897
Germantown Dispensary and Hospital ★▲	Gen	318	128	Indep	Yes[1]	Lay	1870
Greatheart Maternity Hosp ▲	Mater	33	15	Indep	No	R N	1923
Hahnemann Medical College Hospital ★▲	Gen	365	310	Indep	Yes[1]	Lay	1848
Hebrew Orphans Home[2]	Chil	12	2	Indep	No	Lay	1897
Hebrew Sheltering Home	Mater	20	2	Indep	No	Lay	1903
Home for Consumptives	TB	104	104	Church	No	M D	1860
Home for the Indigent[2]	Gen	45	30	City	No	Lay	1913

PENNSYLVANIA—Cont

City, Pop —County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt M D R N Lay	Year Est
Home of the Merciful Saviour for Crippled Children	Ortho	60	55	Church	No	R N	1882
Hospital of the Protestant Episcopal Church in Philadelphia ★▲	Gen	453	319	Church	Yes[1]	Lay	1851
Hospital of the Woman's Medical College of Pennsylvania ★▲	Gen	122(a)	53	Indep	Yes[1]	M D	1904
Hospitals of the Graduate School of Medicine ★+▲	Gen	308	246	Indep	Yes[1]	Lay	1882
Hospital of the University of Pennsylvania ★▲	Gen	539	675	State	Yes[1]	R N	1874
House of Correction [3]	Gen	45	20	City	No	Lay	1847
House of the Good Shepherd	Vener	60	50	Church	No	Lay	1892
Howard Hospital ▲	Gen	81	64	Indep	Yes[1]	R.N	1854
Indigent Widows and Single Women's Society of Pennsylvania [2]	Gen	25	15	Indep	No	M D	1817
Jefferson Medical College Hospital ★▲	Gen	619	443	Indep	Yes[1]	M D	1877
Jewish Hospital ★▲	Gen	230	200	Indep	Yes[1]	M D	1865
Jewish Maternity Hosp +▲	Mater	60	35	Indep	No	R N	1881
Jewish Sheltering Home for the Aged -	Gen	8	3	Indep	No	M D	1890
Joseph Price Memorial Hospital ▲	Gen	60	35	Indep	Yes[1]	Lay	1891
Kensington Hospital for Women	Mater	70	54	Indep	Yes[1]	R N	1887
Kenwood Sanitarium	Gen	35	20	Indiv	No	Lay	1903
Lankenau Hospital ★▲	Gen	242	170	Indep	Yes[1]	M D	1860
Logan Private Hospital	Mater	6	2	Indiv	No	R.N	1926
Lucien Moss Home [3]	Incur	55	45	Indep	No	Lay	1900
Lutheran Orphanage and Home for Aged [2]	Gen	37	10	Church	No	Lay	1859
Mary J Drexel Home and Children's Hospital ▲	Chil	54	28	Church	Yes	Lay	1889
Masonic Home of Pennsylvania [2] [3]	Gen	10	3	Frat	No	Lay	1884
Maternity Hospital	Mater	38	9	Indep	Yes	R.N	1872
Memorial Hospital ★▲	Gen	100(a)	64	Indep	Yes[1]	Lay	1890
Mercy Hospital ★▲	Gen	90	68	Indep	Yes	M D	1906
Methodist Episcopal Hospital ★+▲	Gen	248	208	Church	Yes[1]	Lay	1892
Methodist Episcopal Orphanage [2]	Chil	20	6	Church	No	Lay	1879
Metropolitan Hospital	Gen	40	18	Indep	No	R N	1925
Misericordia Hospital ★▲	Gen	270	182	Church	Yes[1]	Lay	1918
Mt Sinai Hospital ★▲	Gen	155	134	Indep	Yes[1]	Lay	1900
National Stomach Hospital	Gen	47	28	Indep	No	Lay	1915
Northeastern Hospital of Philadelphia	Gen	80	52	Indep	Yes	Lay	1911
Northern Liberties Hosp	Gen	58	46	Indep	No	Lay	1922
Northwestern General Hosp	Gen	65	47	Indep	Yes	Lay	1907
Pennsylvania Hosp Dept for Mental and Nervous Diseases +	N&M	850	283	Indep	Yes[1]	M D	1751
Pennsylvania Hosp Dept for Sick and Injured ★▲	Gen	309	238	Indep	Yes[1]	Lay	1751
Pennsylvania Institution for the Deaf [2]	Gen	60	5	Indep	No	Lay	1820
Philadelphia County Prison Hospital Convict Dept	Gen	50	21	Cy&Co	No	M D	1896
Philadelphia General Hospital ★+▲	Gen	2 600	1 576	City	Yes[1]	M D	1731
Philadelphia Home for Incurables	Incur	162	150	Indep	No	R N	1877
Philadelphia Hospital for Contagious Diseases	Iso	1 200	421	City	Yes[1]	M D	1865
Philadelphia Hospital for Mental Diseases	N&M	4 900	3 746	City	No	M D	1835
Philadelphia Lying In Charity Hospital +▲	Mater	60	50	Indep	Yes	R N	1828
Philadelphia Orthopedic Hospital and Infirmary for Nervous Diseases +	Ortho Nerv	136	84	Indep	Yes[1]	R N	1867
Presbyterian Hospital in Philadelphia ★+▲	Gen	289	180	Church	Yes[1]	Lay	1871
Presbyterian Orphanage in the State of Pennsylvania [2]	Chil	15	5	Church	No	Lay	1877
Preston Retreat	Mater	50	35	Indep	Yes	M D	1835
Rosneath Farms	N&M	16	14	Indep	No	Lay	1924
Rush Hospital for Consumption and Allied Diseases	TB	145	96	Indep	No	M D	1892
St Agnes Hospital ★▲	Gen	306	203	Church	Yes[1]	Lay	1888
St Christopher's Hospital for Children +▲	Chil	62	50	Indep	Yes[1]	R N	1875
St Edmond's Home for Crippled Children	Ortho	48	30	Church	No	R N	1916
St Joseph's Hospital ★▲	Gen	225	158	Church	Yes[1]	R N	1849
St Luke's Homeopathic Hospital +▲	Gen	54	30	Indep	Yes[1]	R N	1896
St Mary's Hospital ★▲	Gen	210	120	Church	Yes[1]	Lay	1860
St Vincent's Hospital for Women and Children ▲	Gen	324	267	Church	Yes	R N	1885
Samaritan Hospital ★▲	Gen	236	200	Indep	Yes[1]	Lay	1893
Shriner's Hospital for Crippled Children ▲	Ortho	100	40	Frat	No	R N	1923
Stetson Hospital of Philadelphia ▲	Gen	65	41	Indep	Yes[1]	Lay	1887
United States Naval Hospital ★▲	Gen	586	359	Navy	No	M D	1917
United States Veterans Hospital No 49 +▲	N&M	420	398	VetBur	No	M D	1920
West Philadelphia General Homeopathic Hospital and Dispensary	Gen	65	53	Indep	Yes	R N	1904
West Philadelphia Hospital for Women ▲	Gen	122	88	Indep	Yes[1]	M D	1890
Widener Memorial Industrial Training School for Crippled Children	Ortho	100	70	Indep	No	M D	1906

PENNSYLVANIA—Cont

City, Pop —County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt M D R N Lay	Year Est
Wills Hospital +	Eye	115	60	Indep	No	Lay	1832
Woman's Hospital of Philadelphia ★▲	Gen	128	96	Indep	Yes[1]	M D	1861
Woman's Southern Homeopathic Hospital	Gen	46	25	Indep	No	Lay	1896
Women's Homeopathic Hospital of Philadelphia ★▲	Gen	160	110	Indep	Yes[1]	R N	1882
Philipsburg 3 900—Center							
Dr McGirk Sanitarium	Gen	20	12	Indiv	Yes	M D	1901
Philipsburg State Hospital ▲	Gen	96	54	State	Yes[1]	R N	1890
Phoenixville 10 484—Chester							
Phoenixville Hospital	Gen	67	37	Indep	Yes[1]	R N	1893
Pittsburgh 637 100—Allegheny							
Allegheny General Hosp ★+▲	Gen	370	328	Indep	Yes[1]	M D	1889
Belvedere General Hospital	Gen	37	20	Indep	No	M D	1920
Children's Hospital of Pittsburgh +▲	Chil	200	91	Indep	Yes[1]	Lay	1885
Elizabeth Steel Magee Hospital +▲	Mater	160	144	Indep	Yes[1]	R N	1911
Eye and Ear Hospital +▲	EENT	50	33	Indep	No	R N	1895
Fairview Sanatorium	N&M	14	13	Indep	No	R N	1906
J M Gusky Orphanage & Home [2]	Chil	15	5	Indep	No	Lay	1891
Haddon Maternity Hosp	Mater	22	15	Indep	No	Lay	1900
Home for Widows and Orphans of Odd Fellows [2]	Gen	9	3	Frat	No	Lay	1880
Homeopathic Medical and Surgical Hospital & Dispensary of Pittsburgh ★▲	Gen	245	153	Indep	Yes	Lay	1866
Industrial Home for Crippled Children	Ortho	80	75	Indep	No	Lay	1902
Jewish Home for the Aged	Gen	20	18	Indep	No	Lay	1906
Leech Farm Sanatorium	TB	300	175	City	No	M D	1915
Mercy Hospital ★▲	Gen	601	560	Church	Yes[1]	R.N	1847
Montefiore Hospital Association of Western Pennsylvania ★▲	Gen	65 (a)	47	Indep	Yes	M D	1908
Municipal Hospital for Contagious Diseases	Iso	250	3	City	Yes	M D	1898
Passavant Hospital ★▲	Gen	134	107	Church	Yes[1]	R.N	1849
Pittsburgh Hospital ★▲	Gen	176	132	Church	Yes[1]	R N	1896
Presbyterian Hospital ★▲	Gen	180	145	Church	Yes[1]	R N	1895
Protestant Home for Incurables	Incur	52	51	Church	No	Lay	1883
Protestant Orphan Asylum of Pittsburgh & Allegheny [2]	Chil	12	1	Indep	No	Lay	1832
Rosalia Foundling and Maternity Hospital ▲	Mater	161	145	Indep	Yes	Lay	1891
St Francis Hospital ★+▲	Gen	600	572	Church	Yes[1]	Lay	1865
St John's General Hospital ★▲	Gen	182	139	Church	Yes[1]	Lay	1895
St Joseph's Hospital & Dispensary ★▲	Gen	135	103	Church	Yes[1]	R N	1902
St Margaret Memorial Hospital ★▲	Gen	135	80	Church	Yes[1]	R N	1910
South Side Hospital ★▲	Gen	213	160	Indep	Yes[1]	R N	1889
Tuberculosis League Hosp +	TB	120	120	Indep	Yes	R N	1906
United States Marine Hospital No 15 ▲	Gen	60	57	USPHS	No	M D	1851
Wechsler Maternity Hosp	Mater	20	10	Indiv	No	Lay	1918
Western Penitentiary Hospital [2]	Gen	30	11	State	No	M D	1876
Western Pennsylvania Hospital ★▲	Gen	600	428	Indep	Yes[1]	Lay	1848
Western Pennsylvania School for the Deaf [2]	Gen	20	2	Indep	No	Lay	1876
Pittston 20 000—Luzerne							
Pittston Hospital ▲	Gen	110	48	Indep	Yes[1]	R N	1892
Polk 2 662—Venango							
Polk State School +	M&M	2 200	2 150	State	No	M.D	1893
Pottstown 18 700—Montgomery							
Hill School Infirmary -	Gen	40	16	Indep	No	M D	1852
Homeopathic Hospital	Gen	48	17	Indep	Yes	R N	1914
Pottstown Hospital	Gen	70	30	Indep	Yes[1]	R N	1889
Pottsville 23 000—Schuylkill							
Lemos B Warne Hospital	Gen	75	42	Indiv	No	Lay	1923
A C Milliken Hospital	Gen	30	25	Indep	No	R N	1921
Pottsville Hospital ★	Gen	140	85	Indep	Yes[1]	M D	1895
Punxsutawney 11 700—Jefferson							
Adrian Hospital [3]	Gen	65	42	Indep	Yes	M D	1895
Murray Sanitarium	Gastro Intestinal	15	8	Indiv	No	M D	1911
Punxsutawney Hospital	Gen	55	21	Indep	Yes	M D	1908
Reading 113 600—Berks							
Berks County Tuberculosis Sanatorium	TB	50	45	County	No	M D	1908
Homeopathic Medical and Surgical Hospital	Gen	94	55	Indep	Yes	R N	1891
House of the Good Shepherd *in the City of* Reading -	Gen	20	10	Church	No	Lay	1888
Reading Hospital ★▲	Gen	250	135	Indep	Yes[1]	Lay	1869
St Joseph's Hospital ★▲	Gen	180	80	Church	Yes[1]	Lay	1873
Dr Stryker Private Hosp	Gen	20	10	Indiv	No	M D	1908
Renovo 5 877—Clinton							
Renovo Hospital	Gen	25	14	Indep	Yes	R N	1909
Retreat 31—Luzerne							
Retreat Home and Hospital for Chronic Diseases -	Gen	125	98	County	No	Lay	1900
Retreat Mental Hospital	N&M	710	698	County	No	M D	
Ridgway, 6 037—Elk							
Elk County General Hospital	Gen	61	40	Indep	Yes[1]	R N	1901
Ridley Park 1 761—Delaware							
Taylor Hospital	Gen	77	55	Indep	Yes	R N	1910
Roaring Springs 2,379—Blair							
Nason Hospital	Gen	52	30	Indep	Yes	M D	1896

PENNSYLVANIA—Cont

City Pop—County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt MD RN Lay	Year Est
Rochester 6 957—Beaver							
Passavant Memorial Homes for the Care of Epileptics	Epil	130	100	Church	No	Lay	189[illegible]
Rochester General Hospital	Gen	90	83	Indep	Yes	RN	1899
St Marys 6 967—Elk							
Andrew Kaul Memorial Hospital	Gen	42	18	Indep	No	RN	1912
Sayre 8 078—Bradford							
People s Co-operative Hosp	Gen	40	27	Indep	Yes	RN	1910
Robert Packer Hospital★▲	Gen	235	169	Indep	Yes[1]	Lay	1885
Schuylkill Haven 5 437—Schuylkill							
G H Moore s Hospital	E N T	14	6	Indiv	No	MD	1915
Schuylkill County Hospital	Gen	130	120	County	No	MD	1895
Schuylkill County Hospital for Mental Diseases	N&M	492	452	County	No	MD	1911
Scotland 250—Franklin							
Pennsylvania Soldiers Orphan School	Chil	30	2	State	No	Lay	1895
Scranton 143 100—Lackawanna							
Coppinger s Private Hosp	N&M	15	12	Indiv	No	RN	1898
Dr Evans Hospital[2]	Gen	12	6	Indiv	No	MD	1908
Hahnemann Hospital★▲	Gen	109	77	Indep	Yes[1]	Lay	1897
Lackawanna County Tuberculosis Hospital	TB	110	91	County	No	RN	1901
Mercy Hospital	Gen	90	90	Church	Yes[1]	RN	1917
Moses Taylor Hospital★▲	Gen	100	90	Indep	Yes[1]	RN	1892
Municipal Hospital for Contagious Diseases	Iso	50	1	City	No	RN	191[illegible]
St Joseph s Children s & Maternity Hospital	Chil Mater	176	136	Church	Yes[1]	Lay	1890
St Mary s Keller Memorial Hospital	Gen	26	20	Church	Yes[1]	Lay	1916
Scranton Private Hospital	Gen	40	23	Indep	Yes	MD	1894
Scranton State Hospital★+▲	Gen	188	127	State	Yes[1]	Lay	1871
West Side Hospital[2]	Gen	65	55	Indep	Yes[1]	RN	
Woman s Hospital	Mater	18	6	Part	No	MD	192[illegible]
Sellersville 1 739—Bucks							
Grand View Hospital	Gen	35	24	Indep	Yes[1]	RN	1913
Sewickley 4 955—Allegheny							
Sewickley Valley Hospital▲	Gen	45	30	Indep	Yes[1]	RN	1907
Shamokin 21,800—Northumberland							
Dr J H Focht s Maternity Hospital	Mater	10	5	Indiv	No	MD	1926
Shamokin State Hospital▲	Gen	92	73	State	No	MD	1912
Sharon 25 500—Mercer							
Christian H Buhl Hospital▲	Gen	109	64	Indep	Yes	Lay	1892
Sharpsburg 9 108—Allegheny							
United States Veterans Hospital No 103▲	TB	225	150	VetBur	No	MD	
Shenandoah 24 726—Schuylkill							G
Locust Mountain State Hospital	Gen	80	54	State	No	RN	1926
Shillington 2 175—Berks							
Berks County Almshouse Hospital*[2]	Gen	45	20	County	No	MD	1824
Somerset 3 121—Somerset							
Somerset Community Hosp	Gen	20	10	Indep	No	RN	1921
Somerset County Home and Hospital[2]	N&M	490	412	County	No	MD	1900
South Mountain 29—Franklin							
Pennsylvania State Sanatorium for Tuberculosis No 1+	TB	925	812	State	Yes	MD	1902
Spangler 3 035—Cambria							
Miners Hospital of Northern Cambria	Gen	69	49	Indep	Yes	RN	1910
State College 2,405—Center							
Pennsylvania State College Health Service Infirmary	Gen	8	6	State	No	MD	1916
Stroudsburg 5,278—Monroe							
Monroe County Hospital	Gen	28	15	County	No	RN	1908
Sunbury 17 000—Northumberland							
Mary M Packer Hospital	Gen	60	33	Indep	No	MD	1895
Susquehanna 3 764—Susquehanna							
Simon H Barnes Memorial Hospital	Gen	20	13	Indep	No	RN	1904
Tarentum 8,925—Allegheny							
Allegheny Valley Hospital	Gen	92	61	Indep	Yes	RN	1906
Titusville 8 432—Crawford							
Titusville City Hospital	Gen	44	19	Indep	Yes[1]	RN	1901
Torrance 414—Westmoreland							
Torrance State Hospital	N&M	480	443	State	No	MD	1915
Troy 1 419—Bradford							
Bradford County Home*	Gen	14	11	County	No	Lay	1880
Tyrone 9 771—Blair							
Methodist Home for Aged*	Gen	9	6	Church	No	Lay	1918
Uniontown 15 69[illegible]—Fayette							
Uniontown Hospital★▲	Gen	160	145	Indep	Yes[1]	Lay	1902
Upland 2 221—Delaware							
Bram Goiter Institute	Goiter	50	35	Indiv	No	MD	1925
Upper Darby [illegible]28—Delaware							
Delaware County Hospital	Gen	56	New	Indep	No	RN	1927
Valencia 303—Butler							
Lillian Convalescent Rest	Conv	56	44	Indep	No	RN	1915
Wallingford 68—Delaware							
Philadelphia Orphan Society*	Chil	24	1	Church	No	Lay	1814
Warren 13,300—Warren							
Warren General Hospital▲	Gen	77	51	Indep	Yes[1]	Lay	1898
Warren State Hospital+	N&M	1 700	1 667	State	Yes[1]	MD	1880
Washington 23 330—Washington							
Hillsview Sanitarium	Conv	50	50	Indiv	No	MD	1893
Washington County Home[2]	Gen	50	50	County	No	MD	
Washington Hospital▲	Gen	126	105	Indep	Yes	Lay	1894
Waynesboro 9 720—Franklin							
Waynesboro Hospital	Gen	35	12	Indep	No	RN	1922
Greene County Memorial Hospital	Gen	31	13	Indep	No	RN	1907
Weatherly 2,356—Carbon							
Middle Coal Field Poor District Almshouse[2]	Gen	10	5	County	No	Lay	1854
Wernersville 797—Berks							
Wernersville State Hospital	N&M	1 200	1 150	State	No	MD	1894
West Chester 11 717—Chester							
Chester County Hospital★▲	Gen	110	77	Indep	Yes[1]	Lay	1893
Homeopathic Hospital of Chester County▲	Gen	63	37	Indep	Yes[1]	RN	1913
Westfield 1 303—Tioga							
Westfield General Hospital	Gen	12	New	Indiv	No	MD	1927
White Haven 1 438—Luzerne							
Clair Mont Sanatorium	TB	14	10	Indiv	No	RN	1910
Fern Cliff Sanatorium[2]	TB	20	15	Indiv	No	Lay	1891
Hill Crest Sanatorium	TB	8	6	Indiv	No	Lay	1903
Sunnyrest Sanatorium	TB	55	25	Part	No	Lay	1901
White Haven Sanatorium	TB	210	210	Indep	Yes	RN	1895
Wilkes Barre 78 300—Luzerne							
Emergency Contagious Disease Hospital	Iso	9	3	City	No	MD	1918
Home for Friendless Children[2]	Chil	30	10	Indep	No	Lay	1893
Mercy Hospital★▲	Gen	139	126	Church	Yes[1]	Lay	1898
Wilkes Barre General Hospital★▲	Gen	259	193	Indep	Yes[1]	Lay	1872
Wyoming Valley Homeopathic Hospital	Gen	70	60	Indep	Yes[1]	RN	1911
Wilkinsburg 28 000—Allegheny							
Columbia Hospital★▲	Gen	182	124	Church	Yes[1]	RN	1880
Williamson School —— Delaware							
Williamson Free School of Mechanical Trades[2]	Gen	11	2	Indep	No	Lay	
Williamsport 42 655—Lycoming							
Sanitary Hospital of the City of Williamsport	Iso	12	2	City	No	MD	
Williamsport Hospital★▲	Gen	2[illegible]1	117	Indep	Yes[1]	Lay	1873
Williamstown 2 878—Dauphin							
Williams Valley Hospital	Gen	24	4	Indep	No	MD	1918
Windber 9,462—Somerset							
Windber Hospital▲	Gen	97	80	Indep	Yes	MD	1906
Woodville 500—Allegheny							
Allegheny County Home & Hospital for the Insane	N&M TB	1 375 170	1 358 159	County	No	MD	1853
Wyncote 260—Montgomery							
Crest View Sanitarium	N&M	12	8	Indiv	No	Lay	1911
York 49 400—York							
Polyclinic Hospital	Gen	8	5	Indiv	No	MD	1916
West Side Sanitarium▲	Gen	27	25	Indiv	No	MD	1914
York Hospital★▲	Gen	109	75	Indep	Yes[1]	RN	1880
Youngsville 1 611—Warren							
Rouse Hospital*	Gen	100	89	County	No	Lay	1865

Total registered hospitals in Pennsylvania 415 capacity 69 867 average census 55 914 Hospitals not admitted to the register 20 capacity, 865

RHODE ISLAND

City, Pop—County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt MD RN Lay	Year Est
Bristol 12 707—Bristol							
Rhode Island Soldiers Home	Gen	50	43	State	No	Lay	1889
Central Falls 25 403—Providence							
Notre Dame Hospital	Gen	55	16	Indep	Yes	RN	1923
Hillsgrove 1 820—Kent							
St Joseph s Sanitarium Annex	TB	80	75	Indep	No	RN	1904
Howard 2 250 —— 1878							
Rhode Island State Prison Hospital	Gen	18	12	State	No	Lay	1878
Sockanosset School for Boys[2]	Gen	12	8	State	No	Lay	1882
State Hospital for Mental Diseases+	N&M	1 775	1 643	State	Yes[1]	MD	1869
State Infirmary★+	Gen	685	627	State	No	MD	1872
Hoxsie 79 —— Kent							
Lakeside Home and Preventorium	TB	150	33	Indep	No	RN	1910
Newport 27 757—Newport							
Newport Hospital▲	Gen	170	68	Indep	Yes[1]	MD	1873
Station Hospital	Gen	25	8	Army	No	MD	1862
United States Naval Hosp	Gen	508	300	Navy	No	MD	1913
Pawtucket 69 760—Providence							
Memorial Hospital★▲	Gen	100	80	Indep	Yes[1]	RN	1910
Providence 267 918—Providence							
Butler Hospital	N&M	180	149	Indep	Yes[1]	MD	1844
Dorcus Convalescent Home	Conv	8	7	Indiv	No	RN	1914
Health Sanatorium	Conv	19	12	Indiv	No	Lay	1918
Health Sanitarium Annex	Conv	14	12	Indiv	No	Lay	1922
Homeopathic Hospital of Rhode Island▲	Gen	90	64	Indep	Yes[1]	Lay	1904
Hope Hospital	Gen	35	33	Indep	No	Lay	1913
Jane Brown Memorial Hosp	Gen	84	44	Indep	No	MD	1922
John W Keefe Surgery	Gen	25	10	Indiv	No	MD	1915
Miriam Hospital▲	Gen	65	30	Indep	No	Lay	1925
Providence City Hosp+▲	Iso	190	124	City	No	MD	1910
Providence Lying In Hosp▲	Mater	112	60	Indep	Yes	MD	1884
Rhode Island Hospital★+▲	Gen	600	353	Indep	Yes[1]	MD	1864
St Elizabeth Home	Incur	45	44	Church	No	RN	1883
St Joseph s Hospital★▲	Gen	190	130	Church	Yes[1]	RN	189[illegible]
Slocum 415—Washington							
Exeter School	N&M	130	398	State	No	MD	1907
Wakefield 2 716—Washington							
South County Hospital	Gen	22	15	Indep	No	RN	1919

RHODE ISLAND—Cont

City, Pop —County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt M D R N Lay	Year Est.
Wallum Lake 75—Providence							
Rhode Island State Sanatorium+	TB	370	323	State	No	M D	1905
Westerly 11 177—Washington							
Westerly Hospital▲	Gen	61	28	Indep	Yes[1]	R N	1925
Woonsocket 49 681—Providence							
Woonsocket Hospital	Gen	120	51	Indep	Yes[1]	R N	1873

Total registered hospitals in Rhode Island 31 capacity 6 178 average census 4 850 Hospitals not admitted to the register 2 capacity, 77

SOUTH CAROLINA

City Pop —County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt M D R N Lay	Year Est
Abbeville 4 570—Abbeville							
Abbeville County Memorial Hospital	Gen	35	6	Cy&Co	Yes[1]	R N	1920
Aiken 4 103—Aiken							
Aiken Cottage Sanatorium	TB	17	7	Indep	No	R N	1897
Anderson 11 200—Anderson							
Anderson County Hospital▲	Gen	76	39	County	Yes[1]	M D	1908
St Mary s Hospital	Gen	55	10	Indiv	Yes	R N	1914
Bennettsville 3 197—Marlboro							
Bennettsville Hospital	Gen	24	10	Indep	No	R N	1922
Camden 3 930—Kershaw							
Camden Hospital	Gen	35	14	County	Yes[1]	R N	1913
Cedar Spring 162—Spartanburg							
Infirmary of the South Carolina School for the Deaf and Blind -	Gen	24	4	State	No	Lay	
Charleston 64 160—Charleston							
Baker Sanatorium▲	Gen	60	35	Indep	Yes[1]	R N	1912
Charleston Orphan House-	Chil	25	10	City	No	R N	1790
Citadel Hospital -	Gen	30	10	State	No	R N	1923
McClennan Hospital & Training School[3]	Gen	20	3	Indep	Yes[1]	R N	1896
Roper Hospital★▲	Gen	279	209	Indep	Yes[1]	Lay	1850
St Francis Xavier Infirmary▲	Gen	60	30	Church	Yes[1]	R N	1882
Chester 5 557—Chester							
Pryor Hospital	Gen	51	28	Indep	Yes	M D	1896
Clinton 3 767—Laurens							
Thornwell Orphanage[2]	Chil	30	15	Church	No	Lay	1875
Columbia 41 800—Richland							
Columbia Hospital of Richland County★▲	Gen	119	78	County	Yes[1]	Lay	1892
Confederate Infirmary -	Gen	25	15	State	No	Lay	1909
Epworth Orphanage[3]	Chil	16	7	Church	No	Lay	1893
Good Samaritan Hospital[3]	Gen	46	25	Indiv	Yes[1]	Lay	1910
South Carolina Baptist Hospital★▲	Gen	113	78	Church	Yes[1]	Lay	1914
South Carolina Penitentiary Hospital[3]	Gen	50	25	State	No	Lay	1866
South Carolina State Hospital	N&M	2 800	2 088	State	Yes	M D	1872
South Carolina University Infirmary[3]	Gen	25	3	State	No	Lay	1889
Waverley Hospital	Gen	35	25	Indep	No	Lay	1924
Waverley Sanitarium	N&M	85	25	Indep	No	Lay	1914
Conway 1 969—Horry							
Conway Hospital	Gen	17	8	Indep	No	M D	1923
Florence 13 182—Florence							
Florence Infirmary▲	Gen	125	90	Indep	Yes[1]	M D	1906
Saunders Memorial Hosp	Gen	65	61	Indep	Yes[1]	R N	1921
Gaffney 065—Cherokee							
City Hospital	Gen	36	15	Indep	Yes[1]	R N	1909
Greenville 27 311—Greenville							
Emma Moss Booth Memorial Hospital▲	Gen	60	40	Church	Yes[1]	Lay	1921
Greenville City Hospital★▲	Gen	111(a)	65	City	Yes[1]	R.N	1912
Hopewell Sanatorium	TB	24	20	Cy&Co	No	Lay	1915
Dr Jervey s Private Hospital	EENT	15	7	Indiv	No	R N	1918
Montgomery Hospital	Gen	85	23	Indiv	Yes[1]	Lay	1921
Shriners Hospital for Crippled Children	Ortho	50	New	Frat	No	Lay	1927
Dr Tyler s Hospital	Gen	16	6	Indiv	No	Lay	1913
Webb Memorial Infirmary	Gen	40	0	Indep	No	R N	1925
Working Benevolent Hosp	Gen	20	10	Indep	No	R N	1920
Greenwood 9 456—Greenwood							
Brewer Hospital	Gen	24	6	Indep	Yes	Lay	1924
Connie Maxwell Orphanage	Chil	30	15	Church	No	Lay	1891
Greenwood City Hosp▲	Gen	46	13	Indep	Yes[1]	R N	1911
Kingstree 2,074—Williamsburg							
Keller Sanatorium	Gen	28	15	Indiv	Yes[1]	R N	1919
Lake City 1 605—Florence							
Lynch Infirmary	Gen	20	5	Indiv	No	M D	1922
Leesville 1 216—Lexington							
Leesville Infirmary	Gen	26	7	Indep	Yes[1]	M D	1909
Moultrieville 515—Charleston							
Station Hospital	Gen	45	15	Army	No	M D	1900
Mullins 2 379—Marion							
Mullins Hospital	Gen	45	28	Indep	Yes[1]	M D	1921
Navy Yard 1 025—Charleston							
Pinehaven Sanatorium	TB	47	35	County	No	Lay	1924
Newberry 5 894—Newberry							
Newberry County Hosp	Gen	25	8	Indep	Yes[1]	M D	1925
Orangeburg 7 290—Orangeburg							
Orangeburg Hospital▲	Gen	48	35	Indiv	Yes[1]	R N	1919
Parris Island 305—Beaufort							
United State Naval Hosp	Gen	161	73	Navy	No	M D	1899
Ridgewood —— Richland							
Richwood Tuberculous Camp	TB	62	37	Indep	No	R N	1917
Rock Hill 9 383—York							
Fennell Infirmary	Gen	60	30	Indiv	Yes[1]	R N	1909
Lyle Hospital	Gen	20	10	Indiv	Yes[1]	M D	1926
Six Mile 134—Pickens							
Dr Peeks Hospital	Gen	10	5	Indiv	No	M D	1925
Spartanburg 25 637—Spartanburg							
Mary Black Clinic and Private Hospital▲	Gen	35	29	Part	Yes[1]	M D	1924
Provident Hospital	Gen	20	10	Indiv	Yes[1]	Lay	1920
Spartanburg General Hospital▲	Gen	115	61	County	Yes[1]	M D	1921
Wofford Infirmary -	Gen	13	5	Indep	No	Lay	1919
State Park — Richland							
Palmetto Sanatorium	TB	26	23	State	No	M D	1919
South Carolina Sanatorium	TB	200	120	State	No	M D	1915
Summerville 2 550—Dorchester							
Arthur B Lee Hospital	Gen	11	2	Indep	No	Lay	1922
Summerville Infirmary	Gen	10	3	Indep	No	R N	1916
Sumter 10 012—Sumter							
Camp Alice Sumter County Tuberculosis Sanitarium	TB	23	9	Cy&Co	No	R.N	1917
Toumey Hospital▲	Gen	44	30	Indep	Yes[1]	R N	1915
Union 6 141—Union							
Wallace Thompson Hospital	Gen	20	5	City	No	Lay	1921
Walterboro 1 853—Colleton							
Charles Js Dorn Hospital	Gen	50	20	Indiv	Yes[1]	R N	1914

Total registered hospitals in South Carolina 66 capacity 5 023 average census, 4 397 Hospitals not admitted to the register 1 capacity 15

SOUTH DAKOTA

City Pop —County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt M D R N Lay	Year Est
Aberdeen 15 100—Brown							
Lincoln Hospital▲	Gen	80	40	Indep	Yes[1]	Lay	1920
St Luke s Hospital▲	Gen	100	50	Church	Yes[1]	R.N	1901
Avon 650—Bon Homme							
Hollingsworth Hospital	Gen	10	6	Indiv	No	M D	1919
Belle Fourche 1 244—Butte							
Belle Fourche Hospital	Gen	8	4	Indep	No	Lay	1924
Bristol 621—Day							
Bristol Hospital	Gen	10	4	Indiv	No	R N	1918
Brookings 4 613—Brookings							
Dakota Deaconess Hospital	Gen	14	7	Church	No	R.N	1912
Camp Crook 141—Harding							
Camp Crook Hospital[4]	Gen	12	4	Indep	No	R N	1918
Canova 330—Miner							
Canova Hospital	Mater	10	5	Indep	No	R N	1923
Canton 2 563—Lincoln							
Canton Asylum for Insane Indians	N&M	92	92	Indian	No	M D	1898
Chamberlain 1 521—Brule							
Chamberlain Sanitarium and Hospital▲	Gen	80	34	Indep	Yes[1]	M D	1907
Cheyenne Agency 121—Dewey							
Cheyenne River Indian Hospital	Gen	40	20	Indian	No	M D	1915
Deadwood 2,432—Lawrence							
St Joseph s Hospital	Gen	75	23	Church	Yes[1]	R N	1897
Dell Rapids 1 582—Minnehaha							
Dell Rapids Hospital	Gen	30	22	Part	Yes[1]	M D	1914
Edgemont 1 092—Fall River							
Edgemont Hospital	Gen	9	4	Indiv	No	M D	1920
Faulkton 815—Faulk							
Faulk County Hospital	Gen	15	6	County	No	R N	1921
Flandreau 1 850—Moody							
Flandreau Indian School Hospital	Gen	27	11	Indian	No	R N	1893
Moody County Hospital	Gen	10	5	Indep	No	R N	1915
Fort Meade — Meade							
Station Hospital	Gen	43	10	Army	No	M D	1875
Fort Thompson 65—Buffalo							
Marcoe Indian Hospital	Gen	24	12	Indian	No	M D	1910
Garretson 678—Minnehaha							
Do Vall Hospital	Gen	10	3	Indiv	No	R N	1925
Geddes 1 002—Charles Mix							
Bury Hospital	Gen	7	2	Indiv	No	M D	1924
Herreid 475—Campbell							
Herreid Hospital	Gen	8	5	Indiv	No	R N	1925
Hot Springs 2 447—Fall River							
Battle Mountain Sanit▲	Gen	544	419	Fed	No	M D	1907
Lutheran Sanatorium and Hospital	Gen	50	25	Church	Yes[1]	R N	1917
Our Lady of Lourdes Hosp	Gen	75	32	Church	Yes[1]	Lay	1900
State Soldiers Home[2]	Gen	30	20	State	No	Lay	1889
Huron 10 204—Beadle							
Sprague Hospital	Gen	52	30	Indep	Yes[1]	Lay	1910
Lead 6 810—Lawrence							
Homestake Hospital	Gen	25	15	Indus	No	M D	1877
Madison 4 386—Lake							
New Madison Hospital▲	Gen	50	26	Indep	Yes[1]	Lay	1919
Milbank 2,444—Grant							
St Bernard s Providence Hospital	Gen	25	8	Indep	No	R N	1920
Miller 1 578—Hand							
Hagin and Gregory Hosp	Gen	18	11	Part	No	R N	1920
Mitchell 10 119—Davison							
Methodist State Hosptial▲	Gen	100	60	Church	Yes[1]	R.N	1917
St Joseph s Hospital▲	Gen	75	35	Church	Yes[1]	Lay	1906
Mobridge 2 822—Walworth							
Jacoby Hospital	Gen	20	10	Indiv	No	M D	1919
Mobridge Hospital	Gen	20	10	Indep	No	M D	1913
Onida 632—Sully							
Onida Hospital[3]	Gen	10	5	Indiv	No	Lay	1917
Parkston 1 305—Hutchinson							
Dr J L Waldner s Hosp	Gen	12	5	Indiv	No	Lay	1921
Pierre 3 500—Hughes							
Pierre Indian School Hosp	Gen	30	10	Indian	No	R N	1891
St Mary s Hospital▲	Gen	50	40	Church	Yes[1]	R N	1900
Pine Ridge 618—Shannon							
Oglala Boarding School Hospital	Gen	20	8	Indian	No	Lay	1914
Platte 1 393—Charles Mix							
Platte Hospital	Gen	8	3	Indiv	No	M D	1925

SOUTH DAKOTA—Cont

City Pop—County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt M D R N Lay	Year Est
Rapid City 7 465—Pennington							
Methodist Deaconess Hosp ▲	Gen	53	31	Church	Yes[1]	R N	1912
Rapid City Indian School Hospital	Gen	20	15	Indian	No	Lay	1906
St John's Hospital	Gen	35	25	Church	Yes[1]	R N	1926
Redfield 2,751—Spink							
Baldwin Community Hosp	Gen	15	6	Indep	No	R N	1917
State School and Home for Feeble Minded	FeMi	600	425	State	No	M D	1901
Rosebud 120—Todd							
Rosebud Agency Indian Hospital	Gen	30	16	Indian	No	Lay	1915
Sanator 10—Custer							
South Dakota State Sanatorium for Tuberculosis	TB	240	182	State	No	M D	1911
Sioux Falls 31,200—Minnehaha							
McKennan Hospital ▲	Gen	110	75	Church	Yes[1]	Lay	1912
Moe Hospital and Clinic ▲	Gen	50	26	Indiv	Yes[1]	R N	1917
Sioux Valley Hospital	Gen	45	33	Indep	Yes[1]	Lay	1894
South Dakota School for the Deaf	Gen	6	2	State	No	Lay	1883
South Dakota State Penitentiary Hospital[2]	Gen	8	4	State	No	Lay	1885
Tyndall 1 370—Bon Homme							
Tyndall Hospital	Gen	6	3	Indiv	Yes	M D	1921
Vermilion 3 410—Clay							
Vermilion Hospital	Gen	10	6	Indiv	Yes	R N	1915
Volga, 601—Brookings							
Volga Hospital	Gen	20	10	Indep	No	M D	1910
Wagner 1 444—Charles Mix							
Pinard Hospital	Gen	8	2	Indiv	No	M D	1917
Wagner Hospital	Gen	5	2	Indiv	No	M D	1915
Watertown 10 319—Codington							
Bartron Hospital ▲	Gen	60	24	Part	Yes[1]	R N	1909
Luther Hospital ▲	Gen	65	46	Church	Yes[1]	R N	1915
Webster 1 687—Day							
Peabody Hospital ▲	Gen	75	40	Indiv	Yes[1]	Lay	1914
Winner 2 203—Tripp							
Winner General Hospital	Gen	10	3	Part	No	R N	1922
Yankton 5 507—Yankton							
Sacred Heart Hospital ▲	Gen	100	74	Church	Yes[1]	Lay	1914
Yankton State Hospital +	N&M	1 430	1 330	State	No	M D	1879

Total registered hospitals in South Dakota 64 capacity 4 029 average census 3 520 Hospitals not admitted to the register, 5 capacity 187

TENNESSEE

City Pop—County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt M.D R N Lay	Year Est
Bearden 218—Knox							
Eastern State Hospital	N&M	1 150	1 130	State	No	M D	1885
Bolivar 1 031—Hardeman							
Western State Hospital	N&M	900	850	State	No	M D	1889
Bristol 8 370—Sullivan							
Mercy Hospital	Gen	18	6	Indep	No	R N	1922
Centerville 882—Hickman							
Edwards Infirmary[3]	Gen	12	8	Indiv	No	M D	1921
Chattanooga 72 200—Hamilton							
Baroness Erlanger Hosp ★▲	Gen	200	175	Cy&Co	Yes[1]	R N	1888
Chattanooga Hospital	Gen	50	20	Indiv	Yes[1]	R N	1903
Newell and Newell Sanit ▲	Gen	85	35	Part	Yes[1]	Lay	1908
Pine Breeze Sanatorium +	TB	200	140	Indep	No	M D	1913
Clarksville 8 110—Montgomery							
Clarksville Home Infirmary	Gen	25	12	Indiv	No	M D	1896
Clarksville Hospital	Gen	25	10	Indep	Yes[1]	R N	1917
Cleveland 6 522—Bradley							
Speck Hospital	Gen	33	5	Indiv	Yes	M D	1921
Columbia 5 576—Maury							
King's Daughters Hospital	Gen	30	15	Church	Yes[1]	R N	1912
Cookeville 2,395—Putnam							
Howard Hospital[3]	Gen	15	10	Indiv	No	M D	1921
Copperhill 1 500—Polk							
Tennessee Copper Company's Hospital	Indus	15	1	Indus	No	M D	1898
Dayton 1 701—Rhea							
Broyles Private Hospital	Gen	16	8	Indiv	No	M D	19 6
Thompson Hospital	Gen	10	6	Indiv	No	R N	1926
Donelson 110—Davidson							
Tennessee Home and Training School for Feeble minded Persons	FeMi	70	10	State	No	M D	1923
Ducktown 1 526—Polk							
Kimsey Gunn Hospital	Gen	6	4	Part	No	R N	1925
Dyersburg 6 444—Dyer							
Baird Brewer Hospital ▲	Gen	50	20	Indep	Yes[1]	M D	1914
Dyersburg General Hospital	Gen	50	8	Indep	Yes[1]	M D	1918
Elizabethton 2 749—Carter							
Elizabethton General Hosp[3]	Gen	20	8	Indep	No	M D	1920
Erwin 2 9[illegible]—Unicoi							
Erwin General Hospital	Gen	18	11	Part	No	R N	1925
Fayetteville 3 629—Lincoln							
Lincoln County Hospital	Gen	18	1	County	No	R N	1913
Fountain Head 180—Sumner							
Fountain Head Health Retreat	Conv	15	8	Indep	No	R N	1911
Greeneville 3 775—Greene							
Greeneville Sanatorium and Hospital	Gen	25	15	Part	Yes[1]	M D	1913
Takoma Hospital and Sanit	Gen	45	25	Indep	Yes	M D	1923
Hermitage 62—Davidson							
Confederate Soldiers Home	Gen	24	10	State	No	M D	1892
Jackson 19 9[illegible]5—Madison							
Crook Sanatorium	Gen	65	25	Indep	Yes[1]	R N	19 8
Memorial Hospital	Gen	25	15	City	Yes[1]	R N	19[illegible]
Johnson City, 14 700—Washington							
Appalachian Hospital ▲	Gen	50	25	Part	Yes[1]	R N	1921
Campbell's Eye Ear Nose and Throat Hospital	EENT	10	2	Indiv	No	Lay	1926
Elizabeth Coss Mem Hosp	Gen	20	10	Indiv	No	M D	1921
Johnson City National Sanatorium ▲	TB	1 358	651	Fed	No	M D	1903
Jones Eye Ear Nose and Throat Hospital	EENT	17	10	Indiv	No	M D	1923
Kingsport 5 692—Sullivan							
Riverview Hospital[3]	Gen	25	15	Indiv	No	R N	1919
Knoxville 98 800—Knox							
Beverly Hills Sanatorium	ChilTB	105	100	Indep	No	Lay	1924
Dr H F Christenbery Eye Ear Nose and Throat Infirmary	EENT	15	6	Indiv	No	M D	1917
Dr H T Goetz Sanitarium	N&M	35	22	Indiv	No	R N	1912
Knoxville General Hosp ★▲	Gen	225	143	City	Yes[1]	Lay	1902
Reaves Leach Infirmary	EENT	5	1	Part	No	M D	1922
Riverside-Ft Sanders Hosp ▲	Gen	165	64	Indep	Yes[1]	Lay	1918
Tennessee School for Deaf[2]	Gen	20	10	State	No	M D	1845
United States Trachoma Hospital	Trach	24	18	USPHS	No	M D	1916
University of Tennessee Infirmary[2]	Gen	12	4	State	No	M D	1924
Lawrenceburg 2 461—Lawrence							
Lawrenceburg Rural Sanit	Gen	30	15	Indep	No	M D	1925
Lebanon 4 084—Wilson							
Lillard's Infirmary[3]	Gen	18	6	Indiv	No	M D	1905
McFarland Hospital	Gen	12	8	Indiv	No	Lay	1918
Loudon 1 900—Loudon							
J T Harrison Jr Sanit	Gen	20	10	Indiv	No	Lay	1910
Madison 89—Davidson							
Madison Rural Sanitarium	Gen	65	89	Indep	Yes[1]	M D	1905
Maryville 2 739—Blount							
Maryville College Hosp[3]	Gen	13	4	Indep	No	Lay	1909
McMinnville 2 814—Warren							
McMinnville Infirmary	Gen	10	5	Indiv	Yes	M D	1912
Memphis 177 000—Shelby							
Baptist Memorial Hosp ★+▲	Gen	350	262	Church	Yes[1]	Lay	1908
Crippled Children's Hospital School	Ortho	37	36	Indep	No	R N	1918
Ella Oliver Home	Mater	10	5	Indep	No	Lay	1876
Gartly Ramsey Hospital	Gen	30	25	Part	Yes[1]	Lay	1909
Hospital for Crippled Adults	Ortho	30	28	Indep	No	R N	1923
Jane Terrell Baptist Hosp[3]	Gen	110	78	Indep	Yes[1]	M D	1909
Lynnhurst Sanitarium	N&M	29	14	Indiv	No	M.D	1904
Memphis Eye Ear Nose and Throat Hospital +▲	EENT	75	15	Indep	No	Lay	1920
Memphis General Hosp ★+▲	Gen	325	260	City	Yes[1]	Lay	1897
Mercy Hospital[3]	Gen	25	12	Indiv	Yes	M D	1918
Methodist Hospital ▲	Gen	162	81	Church	Yes[1]	M D	1924
Porter Home and Leath Orphanage	Chil	13	4	Indep	No	Lay	1852
Royal Circle Hospital[3]	Gen	41	15	Frat	Yes	M D	1921
St Joseph's Hospital ★▲	Gen	315	150	Church	Yes[1]	Lay	1889
Shelby County Emergency and Pellagra Hospital	Iso	75	50	County	No	Lay	
Shelby County Hospital	Gen	600	560	County	No	M D	1870
United States Marine Hospital No 12 ▲	Gen	65	52	USPHS	No	M D	1870
United States Veterans Hospital No 88 ▲	Gen	325	250	VetBur	No	M D	1922
Wallace Sanitarium	N&M	60	30	Part	No	M D	1900
Willis C Campbell Clinic	Ortho	50	40	Part	No	Lay	1920
Monterey, 1 445—Putnam							
Officer Sanatorium	TB	10	6	Indiv	No	M D	1925
Morristown 5 875—Hamblen							
Morristown General Hosp	Gen	30	12	Indep	Yes[1]	R N	1908
Murfreesboro 5,367—Rutherford							
Rutherford Hospital	Gen	50	30	Indep	No	R N	1926
Nashville 137 000—Davidson							
Baptist Hospital ▲	Gen	75	40	Church	Yes[1]	R N	1903
Burr Infirmary	Gen	25	15	Indiv	Yes[1]	M.D	1911
Central State Hospital	N&M	1 250	1 160	State	No	M D	1852
City View Sanitarium	N&M	65	40	Indiv	Yes[1]	M D	1907
Davidson County Hospital	N&M	500	400	County	No	M D	1893
Davidson County Isolation Hospital	Iso	40	10	County	No	M D	1904
Davidson County Tuberculosis Hospital +	TB	176	176	County	Yes[1]	M D	1909
Dr Douglas Sanitarium	N&M	11	3	Indiv	No	M D	1920
Dozier Hospital	Gen	30	22	Indiv	Yes[1]	M D	
Geo W Hubbard Hospital of Meharry Med Coll ★▲	Gen	136	69	Indep	Yes[1]	R N	1910
Millie L Hale Hospital ▲	Gen	50	35	Indep	Yes[1]	R N	1916
Nashville City Hospital ★▲	Gen	152	92	City	Yes[1]	M D	1879
Protestant Hospital ★▲[3]	Gen	125	75	Indep	Yes[1]	R N	1919
St Thomas Hospital ★▲	Gen	200	110	Church	Yes[1]	R N	1898
Tennessee Industrial School[2]	Gen	54	15	State	No	Lay	1886
Tennessee School for the Blind	Gen	12	4	State	No	M D	1844
Tennessee State Prison Hospital[2]	Gen	115	35	State	No	M D	1900
Vanderbilt University Hospital ★+▲	Gen	220	150	Indep	Yes[1]	Lay	1907
Newport 2 753—Cocke							
E T Northcutt Hospital	Gen	12	4	Indiv	No	M D	1919
Oakville 163—Shelby							
Oakville Memorial Sanat	TB	225	221	Cy&Co	No	M D	1919
Paris 5 800—Henry							
Hoyland General Hospital[3]	Gen	15	4	Indiv	No	Lay	1924
McSwain Hospital	Gen	12	8	Indiv	No	R N	1926
Wiggins and Burrus Clinic	Gen	12	10	Indiv	Yes	R N	1924
Pleasant Hill 148—Cumberland							
Uplands Cumberland Mountain Sanatorium	Gen	12	6	Indep	No	M D	1922
Pressmen's Home 160—Hawkins							
International Printing Pressmen and Assistants Union Sanatorium and Home	TB	60	30	Indep	No	M D	1915

TENNESSEE—Cont

City, Pop.—County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt M D R N Lay	Year Est
Pulaski 2,780—Giles							
Pulaski Hospital	Gen	25	8	Indiv	No	M D	1926
Richard City 398—Marion							
Employees Hospital	Indus	5	2	Indus	No	M D	1919
Ridgetop 126—Robertson							
Watauga Sanitarium	TB	50	25	Indep	No	M D	1910
Rockwood 4,652—Roane							
Chamberlain Mem Hosp	Gen	40	25	Indep	Yes	R N	1918
Rogersville 1,402—Hawkins							
Dr J S Lyon's Priv Hosp	Gen	10	8	Indiv	No	M D	1926
Dr Miller's Private Hosp	Gen	8	5	Indiv	No	M D	1912
Sewanee 530—Franklin							
Emerald Hodgson Memorial Hospital	Gen	50	16	Church	Yes[1]	Lay	1890
Shelbyville 2,912—Bedford							
Bedford County Hospital	Gen	20	8	Indep	No	R N	1924

Total registered hospitals in Tennessee 106 capacity 12,066 average census 8,541 Hospitals not admitted to the register, 7 capacity 166

TEXAS

City, Pop.—County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt M D R N Lay	Year Est
Abilene 10,456—Taylor							
Abilene State Hospital	Epil	830	728	State	No	M D	1901
Alexander Sanitarium	Gen	30	18	Indiv	No	M D	1904
West Texas Baptist Sanit	Gen	60	30	Church	Yes[1]	R N	1921
Alpine 931—Brewster							
Turney Hospital	Gen	8	3	Indiv	No	M D	1923
Amarillo 17,780—Potter							
St Anthony's Sanitarium ▲	Gen	60	40	Church	Yes[1]	R N	1900
Angleton 1,043—Brazoria							
Angleton Sanitarium [3]	Gen	12	6	Indiv	No	Lay	1917
Archer City 689—Archer							
Archer Hospital	Gen	14	6	Indiv	No	M D	1927
Arlington 3,031—Tarrant							
Berachah Home	Mater	11	4	Indep	No	Lay	1894
Knights Templar' Hospital	Gen	27	19	Frat	No	M D	1916
Austin 38,200—Travis							
Austin City Hospital	Gen	60	50	City	Yes[1]	R N	1880
Austin State Hospital	N&M	2,004	1,870	State	Yes[1]	M D	1857
Austin State School	FeMi	670	523	State	No	M D	1917
Oaks Sanitarium	N&M	25	20	Indep	No	M D	1917
St David's Hospital	Gen	48	18	Church	Yes[1]	R N	1918
Scott and Gregg Hospital	Gen	15	10	Part	No	M D	1923
Seton Infirmary	Gen	150	60	Church	Yes[1]	Lay	1902
State Hospital for Senile Insane [3]	N&M	450	450	State	No	M D	1924
Texas Confederate Home Hospital [3]	Gen	100	95	State	No	Lay	1891
Texas Confederate Woman's Home -	Gen	57	47	State	No	Lay	1908
Texas Deaf Dumb and Blind Institute for Colored Youths of Texas	Gen	12	3	State	No	Lay	1887
Texas School for the Blind [2]	Gen	36	10	State	No	Lay	1856
Texas School for the Deaf	Gen	20	15	State	No	Lay	1857
Ballinger 2,767—Runnels							
Halley and Love Sanitarium	Gen	25	10	Part	Yes[1]	R N	1905
Bastrop 1,828—Bastrop							
F A Orgain Mem Hosp	Gen	20	5	Indep	No	R N	1923
Bay City 3,454—Matagorda							
Dr Loos Hospital	Gen	13	5	Indiv	No	M D	1922
Beaumont 52,500—Jefferson							
Hotel Dieu Hospital ★▲	Gen	175	130	Church	Yes[1]	Lay	1897
Jefferson County Tuberculosis Hospital	TB	31	26	County	No	Lay	1924
Beeville 3,063—Bee							
Beeville Hospital	Gen	22	10	Indiv	No	M D	1915
Belton 5,098—Bell							
Belton General Hospital	Gen	14	8	Part	No	Lay	1916
Big Spring 4,273—Howard							
Big Spring Sanitarium [3]	Gen	10	5	Part	No	R N	1916
Boerne 1,155—Kendall							
St Mary's Sanitarium	TB	30	25	Church	No	Lay	1895
Bonham 6,008—Fannin							
S B Allen Memorial Hosp	Gen	35	15	Indep	Yes[1]	R N	1903
Borger — Hutchinson							
Pantex Hospital of the Phillips Petroleum Co	Indus	25	12	Indus	No	M D	1926
Bowie 3,179—Montague							
Bowie Clinic Hospital	Gen	20	14	Indep	No	R N	1926
Brackettville 1,630—Kinney							
Station Hospital	Gen	24	18	Army	No	M D	1857
Brady 2,197—McCulloch							
Brady Sanitarium	Gen	20	15	Part	Yes[1]	R N	1917
Breckenridge 1,846—Stephens							
Breckenridge Sanitarium	Gen	20	4	City	No	R N	1923
West Side Hospital	Gen	35	20	Indep	No	R N	
Brenham 5,066—Washington							
Brenham Hospital	Gen	15	6	Indep	No	R N	1920
Brownsville 12,512—Cameron							
Mercy Hospital	Gen	30	15	Church	No	Lay	1922
Station Hospital	Gen	50	2	Army	No	M D	1868
Brownwood 8,675—Brown							
Brownwood Hospital	Gen	20	6	Part	No	R N	1925
Central Texas Hospital	Gen	35	23	Indep	Yes[1]	M D	1922
Miss Stumpp's Sanitarium	Gen	13	6	Indiv	No	R N	1921
Cameron 4,298—Milam							
Cameron Hospital	Gen	35	28	Part	Yes[1]	R N	1913
Canadian 2,187—Hemphill							
Canadian Hospital	Gen	12	8	Indiv	No	M D	1917
Center 1,838—Shelby							
Warren Hospital	Gen	12	3	Part	No	M D	1924
Cisco 7,422—Eastland							
Graham Sanitarium	Gen	30	14	Indiv	Yes	R N	1920
Clarendon 2,456—Donley							
Adair Hospital	Gen	14	5	Indep	No	M D	1907
Wilder Sanitarium	Gen	6	3	Indiv	No	M D	1920

TEXAS—Cont

City, Pop.—County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt M D R N Lay	Year Est
Clarksville 3,386—Red River							
City Hospital	Gen	9	4	Indep	No	Lay	1921
Cleburne 14,162—Johnson							
Cleburne Sanitarium	Gen	20	10	Indiv	No	M D	1916
Coleman 2,868—Coleman							
Overall Memorial Hospital	Gen	30	15	County	No	M D	1923
College Station, 40—Brazos							
Agricultural and Mechanical College Hospital [2]	Gen	100	50	Indep	No	M D	1886
Colorado 1,766—Mitchell							
C L Root Hospital	Gen	15	7	Indiv	No	Lay	1918
Comfort 713—Kendall							
Hillcrest Sanitarium and Private Hospital	Gen	8	4	Indiv	No	M D	1914
Conroe 1,858—Montgomery							
Mary Swain Sanitarium	Gen	20	12	Indiv	No	R N	1920
Corpus Cristi 11,825—Nueces							
Emergency Hospital	Gen	20	15	Indiv	No	R N	1922
Spohn Hospital	Gen	50	25	Church	Yes	Lay	1905
Corsicana 12,364—Navarro							
Corsicana Hosp and Clinic	Gen	20	10	Indep	No	M D	1927
Independent Order of Odd Fellows' Home [2]	Gen	19	11	Frat	No	Lay	1887
Navarro Clinic	Gen	28	14	Indep	No	R N	1928
Navarro County Hospital [3]	Gen	50	31	County	Yes[1]	Lay	1915
Crowell 1,175—Foard							
Foard County Hospital	Gen	8	1	Part	No	R N	1916
Cuero 3,571—DeWitt							
Boothe Hospital	Gen	35	14	Indiv	No	R N	1897
Burns Hospital ▲	Gen	35	15	Indep	Yes[1]	M D	1911
Dalhart 2,676—Dallam							
Trans-Canadian Sanitarium	Gen	20	10	Indiv	No	M D	1912
Dallas 200,000—Dallas							
Baylor Hospital ★+▲	Gen	324	240	Church	Yes[1]	Lay	1909
Buckner Orphans Home [2]	Chil	14	6	Church	No	Lay	1880
Carrell Driver Clinic and Reconstruction Hospital	Ortho	25	15	Part	No	R N	1925
Cedars Maternity Sanit	Mater	15	7	Indiv	No	Lay	1903
Dallas Baby Camp and Hospital	Chil	35	20	Indep	Yes	R N	1913
Dallas Methodist Hospital	Gen	100	New	Church	No	Lay	
McMillan Sanitarium	Gen	22	10	Indiv	No	M D	1921
Parkland Hospital ★+▲	*Gen*	225	173	*Cy&Co*	Yes[1]	M.D	1894
Presbyterian Clinic	Chil	8	5	Church	No	Lay	1921
St Matthews Episcopal *Home for Children* -	*Chil*	6	3	Church	No	Lay	1902
St Paul's Hospital ★▲	Gen	275	180	Church	Yes[1]	Lay	1896
Samuell Clinic Hospital	Gen	26	15	Part	No	R.N	1924
Texas Scottish Rite Hospital for Crippled Children +▲	Ortho	60	48	Frat	No	R.N	1923
Timberlawn Sanitarium	N&M	40	31	Indep	No	M D	1917
Union Hospital [3]	Iso	120	5	Cy&Co	No	M D	1900
Virginia K Johnson Home	Mater	10	1	Church	No	Lay	1893
Woodlawn Sanatorium	TB	120	90	Cy&Co	No	M D	1913
Del Rio 10,580—Val Verde							
Del Rio Hospital	Gen	8	2	Indiv	No	R N	1926
Denison 19,008—Grayson							
Denison Hospital	Gen	25	10	Indep	No	R N	1913
Mercy Hospital	Gen	25	20	Frat	Yes	M D	1925
Missouri Kansas and Texas Railroad Employees Hospital	Indus	65	30	Indus	No	M D	1921
Denton 7,626—Denton							
Denton Hospital and Clinic	Gen	32	15	Part	Yes[1]	R N	1925
Eagle Pass 5,765—Maverick							
Gates Hospital	Gen	17	5	Indiv	No	Lay	1918
Electra 4,744—Wichita							
Parmley Ogden Hospital	Gen	24	New	Part	No	R N	1927
El Paso 109,000—El Paso							
El Paso City County Hosp	Gen	100	95	Cy&Co	No	R.N	1914
El Paso Masonic Hospital ▲	Gen	40	35	Frat	Yes[1]	R.N	1922
El Paso Smelter Hospital	Indus	12	2	Indus	No	M D	1898
Hendricks Laws Sanatorium	TB	84	60	Part	No	Lay	1914
Homan Sanatorium +	TB	110	90	Part	No	M D	1907
Hotel Dieu Sisters Hospital	Gen	100	57	Church	Yes[1]	R N	1894
Long Sanatorium	TB	50	30	Indiv	No	M D	1920
Price Sanatorium	TB	20	14	Indiv	No	M D	1924
Providence Hospital	Gen	50	30	Indiv	Yes[1]	R N	1902
Southern Baptist Sanat	TB	85	58	Church	No	Lay	1919
William Beaumont General Hospital ★+▲	Gen	403	266	Army	No	R N	1924
Ennis 7,224—Ellis							
Municipal Hospital	Gen	24	14	City	No	R N	1924
Falfurrias 1,825—Brooks							
Falfurrias Hospital [2]	Gen	20	10	Indiv	No	M D	1920
Forney 1,345—Kaufman							
Forney Sanitarium	Gen	25	13	Indep	Yes[1]	R N	1917
Ft Worth 159,000—Tarrant							
All Saints Episcopal Hosp ▲	Gen	72	39	Church	Yes[1]	R N	1893
Arlington Heights Sanit	N&M	70	45	Indep	No	M D	1907
Baptist Hospital of Ft Worth ▲	Gen	75	38	Church	Yes[1]	Lay	1921
City and County Hospital ▲	Gen	85	65	Cy&Co	Yes[1]	R N	1914
Ft Worth Children's Hosp	Chil	37	27	Indep	Yes	R.N	1918
Harris Hospital ★▲	Gen	100	85	Indiv	Yes[1]	M D	1912
Masonic Home and School Hospital [2]	Chil	36	8	Frat	No	R N	1898
St Joseph's Infirmary ▲	Gen	200	125	Church	Yes[1]	R N	1885
Tarrant County Home for the Aged -	Gen	20	15	County	No	Lay	
Fredricksburg 3,050—Gillespie							
Fredericksburg Sanitarium	Gen	10	5	Part	No	R N	1901
Gainesville 9,016—Cooke							
Gainesville Sanitarium	Gen	30	19	Indep	Yes[1]	M D	1916
Galveston 49,100—Galveston							
John Sealy Hospital ★▲	Gen	312	246	City	Yes[1]	R N	1890
St Mary's Infirmary ★▲	Gen	150	125	Church	Yes[1]	Lay	1866
Station Hospital	Gen	25	15	Army	No	M D	1900
Gatesville 2,499—Coryell							
State Juvenile Training School -	Gen	50	10	State	No	Lay	1889

TEXAS—Cont. City Pop—County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt M D R N Lay	Year Est
Georgetown 2,871—Williamson							
Martin Hospital	Gen	25	15	Part	No	M D	1923
Gilmer 2,238—Upshur							
Oaklawn Sanitarium	Gen	13	8	Indiv	No	Lay	1914
Gonzales 3,128—Gonzales							
Holmes Hospital	Gen	25	8	Indep	No	R N	1914
Gorman 3,200—Eastland							
Blackwell Sanitarium	Gen	26	16	Part	No	M D	1920
Graham 2,544—Young							
Graham Hospital	Gen	18	10	Indep	No	R N	1925
Greenville 14,386—Hunt							
Dr E P Becton's Hospital	Gen	18	7	Indiv	No	Lay	1912
Cantrell Hospital	Gen	52	40	Indiv	Yes[1]	R N	1908
Dr Joe Becton's Hospital	Gen	15	6	Indiv	Yes	Lay	1901
Dr A. S McBride's Hosp	N&M	15	3	Indiv	No	M D	1924
Groesbeck 1,522—Limestone							
Dr Cox's Hospital	Gen	10	5	Indiv	No	Lay	1923
Gulf 725—Matagorda							
Texas Gulf Sulphur Company Hospital	Indus	16	8	Indus	No	Lay	1921
Hallettsville 1,444—Lavaca							
Renger Hospital	Gen	17	8	Indiv	No	M D	1918
Hamilton 2,018—Hamilton							
Hamilton Sanitarium	Gen	50	20	Part	Yes[1]	M D	1922
Harlingen 1,784—Cameron							
Valley Baptist Hospital	Gen	30	20	Church	Yes[1]	R N	1925
Hereford 1,696—Deaf Smith							
Deaf Smith County Hosp	Gen	25	4	County	No	R N	1924
Hillsboro 6,932—Hill							
Boyd Sanitarium	Gen	25	9	Indiv	No	M D	1922
Houston 164,954—Harris							
Autry Memorial Hosp Sch	TB	36	20	Cy&Co	No	R N	1925
Baptist Hospital ★▲	Gen	181	178	Church	Yes[1]	Lay	1907
Blair's Sanitarium	Gen	15	11	Indiv	No	M D	1901
Ellen Ray Hospital and Maternity Home	Gen	16	5	Indiv	No	Lay	1926
Dr Greenwood's Sanitarium	N&M	35	30	Indep	No	M D	1912
Hermann Hospital ▲	Gen	175	116	Indep	Yes[1]	Lay	1924
Houston Eye Ear and Throat Hospital	EENT	25	12	Part	No	R N	1924
Houston Maternity Sanit	Mater	6	6	Indiv	No	M D	1920
Houston Negro Hospital	Gen	50	15	Indep	No	R N	1927
Houston Tuberculosis Hosp	TB	88	70	Cy&Co	No	R N	1917
Jefferson Davis Hospital ▲	Gen	150	125	Cy&Co	Yes[1]	R N	1919
Methodist Hospital ▲	Gen	93	60	Church	Yes[1]	Lay	1909
St Joseph's Infirmary ★▲	Gen	250	165	Church	Yes[1]	R N	1887
Southern Pacific Hospital ▲	Indus	120	69	Indus	No	Lay	1911
Huntsville 4,689—Walker							
Texas State Prison Hosp	Gen	47	19	State	No	M D	1847
Hutchins 368—Dallas							
Dallas County Farm [3]	Conv	12	4	Cy&Co	No	M D	1872
Jacksonville 3,723—Cherokee							
Cherokee Sanitarium	Gen	29	14	Indep	No	R N	1919
Jasper 2,019—Jasper							
Hardy Hancock Hospital	Gen	23	15	Part	No	Lay	1925
Kelly Field —Bexar							
Station Hospital	Gen	30	20	Army	No	M D	1917
Kerrville, 2,353—Kerr							
Hill Crest Sanatorium	TB	10	9	Part	No	Lay	1917
Kerrville Clinic and Secor Hospital	Gen	25	15	Indiv	No	M D	1911
Thompson Sanatorium	TB	86	75	Indiv	No	M D	1917
Kingsville 4,770—Kleberg							
Kleberg County Hospital	Gen	65	31	County	No	R N	1915
Knox City 698—Knox							
Knox County Hospital	Gen	25	10	County	No	R N	1916
La Grange 1,659—Fayette							
La Grange Hospital	Gen	25	17	Indiv	Yes[1]	R N	1920
Lamesa 1,168—Dawson							
Dunn Sanitarium	Gen	15	3	Indiv	No	M D	1925
Loveless and Bennett Hosp	Gen	14	5	Part	No	R N	1925
Standifer Sanitarium	Gen	16	4	Indiv	No	M D	1924
Laredo 27,159—Webb							
Mercy Hospital	Gen	37	21	Church	Yes[1]	Lay	1894
Station Hospital	Gen	25	15	Army	No	M D	1850
Legion 819—Kerr							
United States Veterans Hospital No 93 ▲	TB	480	310	VetBur	No	M D	1923
Littlefield 2,050—Lamb							
Simpson Sanitarium	Gen	12	6	Indiv	No	M D	1925
Livingston 978—Polk							
Bergman Hospital	Gen	14	8	Indiv	No	M D	1922
Lockhart 3,731—Caldwell							
Lockhart Sanitarium	Gen	15	8	Indep	No	R N	1915
Longview 5,713—Gregg							
Hurst Eye Ear Nose and Throat Hospital	EENT	5	2	Indiv	No	M D	1920
Markham Sanitarium	Gen	14	4	Indiv	No	M D	1923
Lubbock 4,051—Lubbock							
Lubbock Sanitarium	Gen	85	45	Indep	Yes[1]	Lay	1918
West Texas Hospital [3]	Gen	67	35	Indep	Yes[1]	M D	1920
Lufkin 4,878—Angelina							
Angelina County Hospital	Gen	40	18	County	Yes[1]	R N	1919
Luling 1,502—Caldwell							
Luling Hospital	Gen	20	5	Indiv	No	R N	1916
Marfa 3,553—Presidio							
Station Hospital	Gen	54	10	Army	No	M D	1916
Marlin 4,310—Falls							
Buie-Allen Hospital	Gen	20	10	Indiv	No	Lay	1916
Buie Clinic and Marlin Sanitarium Bath House	Gen	20	12	Indep	No	M D	1912
Shaw Clinic and Hospital	Gen	6	4	Indiv	No	M D	1923
Torbett Sanatorium	Gen	35	21	Indep	Yes[1]	M D	1907
Marshall 15,862—Harrison							
Kahn Memorial Hospital	Gen	30	12	Indep	Yes[1]	R N	1911
Texas and Pacific Railway Employees Hospital ▲	Indus	96	56	Indus	No	M D	1886
Mason 1,150—Mason							
Mason Sanitarium	Gen	10	3	Indiv	No	R N	1915
McKinney 6,677—Collin							
Burton Eye Ear Nose and Throat Sanitarium	EENT	12	6	Indiv	No	M D	1911
McKinney City Hospital ▲	Gen	36	12	City	Yes[1]	R N	1921
Memphis 2,839—Hall							
Memphis Hospital	Gen	15	5	Indiv	No	R N	1924
Mercedes 3,414—Hidalgo							
Mercedes General Hospital	Gen	24	11	Frat	No	R N	1920
Mexia 3,482—Limestone							
Brown Hospital	Gen	20	9	Indep	No	R N	1922
Midland 1,795—Midland							
John B Thomas Hospital	Gen	25	New	Indiv	No	M D	1927
Mineral Wells 7,890—Palo Pinto							
Mineral Wells Sanitarium	Gen	16	10	Indiv	No	R N	1921
Myra 417—Cooke							
Mercy Hospital	Gen	8	5	Indiv	No	M D	1917
New Braunfels 3,590—Comal							
City Hospital	Gen	14	5	City	No	Lay	1892
Comal Sanitarium [3]	Gen	30	12	Part	Yes	R N	1919
Nixon 1,124—Gonzales							
Crest View Hospital	Gen	8	3	Indiv	No	M D	1908
Olney 1,164—Young							
Hamilton Hospital	Gen	20	12	Indiv	No	M D	1927
Orange 10,539—Orange							
Frances Ann Lutcher Hosp	Gen	65	39	Indep	Yes[1]	M D	1920
Paducah 1,357—Cottle							
Paducah Hospital	Gen	10	4	Indiv	No	R N	1926
Palestine 11,403—Anderson							
International and Great Northern Railroad Employees Hospital ▲	Indus	100	28	Indus	Yes[1]	M D	1884
Palestine Sanitarium	Gen	15	7	Indep	Yes	R N	1902
Speegle's Sanitarium	Gen	10	5	Indiv	No	M D	1917
Paris 17,274—Lamar							
Lamar County Hospital	Gen	50	20	County	No	R N	1925
Roberts Hospital	EENT	11	1	Indiv	No	Lay	1926
St Joseph's Infirmary ▲	Gen	50	27	Church	Yes[1]	R N	1911
Sanitarium of Paris ▲	Gen	50	43	Indep	Yes[1]	R N	1912
Pearsall 2,161—Frio							
Dr Beall's Day Hospital [3]	Gen	6	3	Indiv	No	M D	1923
Plainview 3,989—Hale							
Plainview Sanitarium	Gen	32	17	Part	Yes[1]	R N	1914
Port Arthur 31,513—Jefferson							
Mary Gates Memorial Hosp	Gen	62	45	Indep	Yes[1]	R N	1910
Poteet 1,024—Atascosa							
Community Hospital	Gen	5	2	Indiv	No	Lay	1925
Prairie View —— Waller							
Prairie View Hospital	Gen	50	25	State	Yes[1]	M D	1918
Quanah 3,691—Hardeman							
Quanah Hospital	Gen	34	20	Part	Yes[1]	R N	1912
Ranger 16,205—Eastland							
City County Hospital [3]	Gen	30	10	Cy&Co	No	R N	1924
Riogrande 3,035—Starr							
Station Hospital	Gen	28	5	Army	No	M D	1856
Rosenberg 1,279—Ft Bend							
Rosenberg Hospital	Gen	10	4	Part	No	R N	1922
Rusk 2,348—Cherokee							
Rusk State Hospital	N&M	1,064	907	State	No	M D	1919
San Angelo 10,050—Tom Green							
The Bungalows	TB	28	20	Indiv	No	R N	1907
St John's Sanitarium	Gen	35	25	Church	Yes[1]	Lay	1910
San Angelo Hospital	Gen	25	18	Church	Yes[1]	Lay	1925
Southwest Sanatorium	TB	40	35	Indiv	No	M D	1921
San Antonio 198,069—Bexar							
Baylor Hospital	Gen	50	45	Indep	Yes[1]	Lay	1908
Eye Ear Nose and Throat Hospital	EENT	20	12	Indep	No	R N	1924
Dr Farmer's Sanatorium	TB	30	15	Indiv	No	M D	1920
Grace Lutheran Sanatorium for Tuberculosis	TB	48	38	Church	No	Lay	1913
Dr Kenney's Sanatorium	Gen	90	60	Indiv	Yes[1]	M D	1904
Lee Surgical Hospital	Gen	35	16	Indiv	Yes[1]	R N	1909
Medical and Surgical Hosp	Gen	60	30	Indep	Yes	R N	1927
Dr Moody's Sanitarium	N&M	70	50	Indiv	No	M D	1918
P and S Hospital	Gen	75	65	Indep	Yes[1]	R N	1903
Robert B Green Memorial Hospital ★▲	Gen	150	99	Cy&Co	Yes[1]	R N	1917
Salvation Army Women's Home and Hospital	Mater	8	4	Church	No	Lay	1910
San Antonio State Hospital	N&M	2,129	2,100	State	Yes[1]	M D	1892
Santa Rosa Infirmary ★▲	Gen	292	146	Church	Yes[1]	R N	1869
Station Hospital	Gen	40	12	Army	No	M D	1917
Station Hospital (Ft Sam Houston) ★▲	Gen	600	558	Army	No	M D	1890
Whiteacre-Merrick Clinic	Gen	7	7	Part	No	R N	1925
Woodmen of the World Memorial Hospital	TB	200	150	Frat	No	M D	1923
Sanatorium 463—Tom Green							
State Tuberculosis Sanatorium +	TB	444	377	State	Yes	M D	1912
San Marcos 4,527—Hays							
Soldiers and Sailors Memorial Hospital	Gen	20	2	Cy&Co	No	R N	1923
Santa Anna 1,407—Coleman							
Sealy Hospital	Gen	35	16	Indiv	Yes[1]	M D	1917
Sealy 1,640—Austin							
Austin County Hospital	Gen	12	5	Indiv	No	Lay	1918
Seymour 2,121—Baylor							
Baylor County Hospital	Gen	18	4	County	No	Lay	1925
Shamrock 1,227—Wheeler							
Shamrock General Hospital	Gen	15	5	Indiv	No	M D	1924
Sherman 16,800—Grayson							
St Vincent's Sanitarium ▲	Gen	75	25	Church	Yes[1]	R N	1902
Sherman Hospital ▲	Gen	66	55	Indiv	Yes[1]	Lay	1913
Shiner 1,300—Lavaca							
Dr Wagner's Hospital	Gen	16	6	Indiv	No	M D	1924
Southton 89—Bexar							
Bexar County Home for the Aged and Bexar Co TB Colony	Gen TB	50	45	County	No	R N	1894

TEXAS—Cont City Pop—County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt MD RN Lay	Year Est
Spur 1 100—Dickens							
Nichols Sanitarium	Gen	20	12	Indiv	No	M D	1920
Stamford 3 704—Jones							
Stamford Sanitarium	Gen	50	27	Indiv	Yes[1]	Lay	1910
Sugar Land 200—Ft Bend							
Laura Eldridge Memorial Hospital	Gen	10	1	Indep	No	Lay	1922
Sweetwater 4 307—Nolan							
Sweetwater Sanitarium	Gen	20	10	Indiv	No	R N	1922
Taylor 5 965—Williamson							
Dr Floeckinger s Sanitarium	Gen	10	6	Indiv	No	R N	1910
Taylor Sanitarium	Gen	18	12	Indiv	Yes[1]	R N	1915
Teague, 3 306—Freestone							
City Hospital	Gen	22	4	City	No	R N	1922
Davidson Sanitarium	Gen	25	11	Indiv	No	Lay	1924
Temple 11 100—Bell							
Gulf Colorado and Santa Fe Hospital (Affl)★▲	Indus	150	61	Indus	No	M D	1891
Kings Daughters Hospital▲	Gen	85	51	Indep	Yes[1]	R N	1897
Scott and White Hospital★▲	Gen	145	105	Indep	Yes[1]	Lay	1904
Terrell 8 816—Kaufman							
Terrell State Hospital	N&M	1 900	1 891	State	No	M D	1885
Texarkana 12,900—Bowie							
Texarkana Sanitarium and Hospital▲	Gen	50	35	Indep	Yes[1]	R N	1900
Tyler 13 200—Smith							
Tyler General Hospital	Gen	16	8	Indep	No	R.N	1921
Vernon 5 142—Wilbarger							
King Hospital and Maternity Home	Gen	25	13	Indiv	No	M D	1923
Moore Brothers Hospital	Gen	34	11	Part	No	R N	1921
Victoria 5 957—Victoria							
Victoria Hospital	Gen	27	18	Indep	Yes	M D	1921
Von Ormy 213—Bexar							
Von Ormy Cottage Sanitarium for Tuberculosis	TB	50	35	Part	No	Lay	1914
Waco 44 800—McLennan							
Central Texas Baptist Sanitarium▲	Gen	90	44	Church	Yes[1]	Lay	1920
Colgin Hospital and Clinic▲	Gen	40	20	Part	No	M D	1921
Providence Sanitarium★▲	Gen	140	79	Church	Yes[1]	R N	1905
Texas Methodist Orphanage -	Chil	16	1	Church	No	Lay	1890
Waxahachie 7 958—Ellis							
New Waxahachie Sanitarium	Gen	52	20	Indep	Yes[1]	R N	1914
Wellington 1 968—Collingsworth							
Baptist Hospital	Gen	13	5	Church	No	R N	1924
Wharton 2,346—Wharton							
Caney Valley Hospital	Gen	25	7	Indiv	Yes	R N	1913
Wichita Falls 40 800—Wichita							
Hargrave Walker Hospital and Clinic	Gen	38	30	Indep	No	R.N	1926
Dr White s Sanitarium	N&M	22	10	Indep	No	M D	1926
Wichita Falls Clinic Hosp	Gen	51	41	Part	No	R.N	1926
Wichita Falls State Hosp+	N&M	[illegible]	040	State	No	M D	1920
Wichita General Hospital▲	Gen	80	60	Cy&Co	Yes[1]	R N	1915
Winters 1 509—Runnels							
Winters Sanitarium	Gen	10	5	Part	No	Lay	1916
Yoakum 6 184—Lavaca							
Huth Memorial Hospital	Gen	35	13	City	Yes[1]	R N	1920
Yorktown 1 723—De Witt							
Allen Hospital	Gen	15	9	Indiv	No	M D	1917

Total registered hospitals in Texas 219 capacity 24 027 average census 18 060 Hospitals not admitted to the register 12 capacity 350

UTAH

City Pop—County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt MD RN Lay	Year Est
Bingham Canyon 2 676—Salt Lake							
Bingham Canyon Hospital	Gen	30	24	Indep	No	Lay	1917
Brigham 5 282—Box Elder							
Cooley Hospital	Gen	11	2	Indiv	No	R N	1925
Pearce Private Hospital	Gen	7	4	Indiv	No	Lay	1920
Cedar City 2 462—Iron							
Iron County Hospital	Gen	[illegible]	10	County	No	R N	1922
Fillmore 1 490—Millard							
Fillmore Hospital	Gen	6	1	Indiv	No	M D	1922
Fort Douglas —— Salt Lake							
Station Hospital	Gen	[illegible]	10	Army	No	M D	1867
Fort Duchesne 100—Uintah							
Uintah and Ouray Agency Indian Hospital	Gen	16	8	Indian	No	Lay	1915
Garland 999—Box Elder							
Bear River Valley Hospital	Gen	6	2	Church	No	Lay	1922
Heber 1 931—Wasatch							
Heber Hospital	Gen	14	4	Part	No	R N	1925
Hiawatha 1 408—Carbon							
United States Fuel Company Hospital	Indus	7	1	Indus	No	M D	1917
Lehi 3 078—Utah							
Lehi Hospital	Gen	13	4	Indiv	No	M D	1913
Logan 10 129—Cache							
Cache Valley General Hospital	Gen	17	7	Part	No	M D	1920
William Budge Memorial Hospital▲	Gen	60	33	Indep	Yes[1]	Lay	1902
Milford 1 308—Beaver							
Milford Hospital	Gen	12	6	Indiv	No	M D	1924
Moab 856—Grand							
Grand County Public Hospital	Gen	9	5	County	No	R N	1918
Murray 4 581—Salt Lake							
Cottonwood Maternity Hospital	Mater	10	2	Indep	No	Lay	1924
Ogden 3[illegible] 600—Weber							
State Industrial School of Utah	Gen	10	3	State	No	M D	1890
Thomas D Dee Memorial Hospital★▲	Gen	115	96	Church	Yes[1]	Lay	1910
Utah School for the Deaf and Blind[2]	Gen	24	8	State	No	Lay	1909
Park City 3 393—Summit							
Park City Miners Hosp	Indus	40	20	Indus	No	Lay	1903
Price 2 364—Carbon							
Price City Hospital	Gen	20	15	City	No	Lay	1923
Provo 11 300—Utah							
Aird Hospital	Gen	20	6	Indiv	No	M D	1923
State Mental Hospital	N&M	826	784	State	No	M D	1883
Richfield 3 262—Sevier							
Richfield General Hospital	Gen	10	4	Part	No	R N	1916
Roy 261—Weber							
Weber County Infirmary -	Gen	16	8	County	No	Lay	
St George 2 215—Washington							
Washington County Hosp	Gen	10	8	Indep	No	M D	1913
Salina, 1 451—Sevier							
Salina Hospital	Gen	20	9	Part	No	M D	1914
Salt Lake City 133 400—Salt Lake							
Dr W H Groves Latter Day Saints Hospital★▲	Gen	244	203	Church	Yes[1]	Lay	1903
Holy Cross Hospital★▲	Gen	225	153	Church	Yes[1]	R N	1875
Latter Day Saints Children s Hospital	Chil	50	35	Church	No	Lay	1922
Mountain View Sanitarium	N&M	10	5	Indiv	No	M D	1917
St Mark s Hospital★▲	Gen	137	109	Church	Yes[1]	R N	1872
Salt Lake General Hospital★▲	Gen	185	134	County	Yes[1]	M D	1912
Utah Sanitarium	Gen	6	1	Indiv	No	M D	1915
Utah State Prison Hosp	Gen	6	2	State	No	M D	
Spanish Fork 4 036—Utah							
Hughes Memorial Hospital	Gen	10	5	Indiv	No	M D	1922
Standardville, 545—Carbon							
Standardville Hospital	Gen	5	3	Indep	No	M D	[illegible]
Vernal 1 309—Uintah							
Vernal Hospital	Gen	10	5	County	No	Lay	1911

Total registered hospitals in Utah 38 capacity 2,252 average census 1 739 Hospitals not admitted to the register 1 capacity 4

VERMONT

City Pop—County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt MD RN Lay	Year Est
Barre 10 008—Washington							
Barre City Hospital	Gen	40	27	Indep	Yes[1]	R N	1907
Washington County Hosp	TB	43	40	County	No	M D	1916
Barton 1 187—Orleans							
Nichols Hospital	Gen	35	8	Indiv	No	R N	1924
Bellows Falls 4 860—Windham							
Rockingham General Hosp	Gen	30	20	Indep	Yes[1]	R N	1900
Bennington 10 444—Bennington							
Henry W Putnam Memorial Hospital	Gen	60	41	Indep	No	R N	1912
Vermont Soldiers Home Hospital -	Gen	25	12	State	No	Lay	1887
Brandon 1 631—Rutland							
Vermont State School for Feeble-minded	Fe Mi	240	260	State	No	M D	1912
Brattleboro 8 616—Windham							
Brattleboro Memorial Hospital▲	Gen	45	25	Indep	Yes[1]	R N	1904
Brattleboro Retreat	N&M	450	500	Indep	No	M D	1834
Melrose Hospital	Gen	20	12	Indep	Yes	Lay	1906
Burlington 24 089—Chittenden							
Bishop De Goesbriand Hospital▲	Gen	100	60	Church	Yes[1]	R N	1921
Green Mountain Sanatorium	Gen	14	12	Indiv	Yes	M D	1910
Lakeview Sanitarium	N&M	25	18	Indep	No	M D	1882
Mary Fletcher Hospital★▲	Gen	130	90	Indep	Yes[1]	M D	1876
Ft Ethan Allen 106—Chittenden							
Station Hospital	Gen	62	15	Army	No	M D	1891
Hardwick 1 550—Caledonia							
Hardwick Hospital	Gen	16	8	County	No	Lay	1906
Middlebury 1 993—Addison							
Porter Memorial Hospital	Gen	21	12	Indep	No	R N	1925
Montpelier 7 125—Washington							
Heaton Hospital▲	Gen	67	44	Indep	Yes[1]	Lay	1895
Newport 4 976—Orleans							
Orleans County Memorial Hospital	Gen	40	19	Indep	Yes[1]	R N	1921
Northfield 1 916—Washington							
Ainsworth Infirmary -	Gen	7	2	Indep	No	Lay	1912
Pittsford 562—Rutland							
Caverly Preventorium	TB	44	42	Indep	No	Lay	1918
Vermont Sanatorium	TB	[illegible]	42	State	No	M D	1906
Proctor 2,692—Rutland							
Ormsbee House	Ortho	17	17	Indiv	No	Lay	1920
Proctor Hospital	Indus	[illegible]	16	Indus	No	R N	1896
Randolph 1 819—Orange							
Randolph Sanatorium	Gen	40	30	Indep	Yes[1]	R.N	1903
Rutland 15 752—Rutland							
Rutland Hospital▲	Gen	60	47	Indep	Yes[1]	Lay	1892
St Albans 7,588—Franklin							
St Albans Hospital▲	Gen	45	28	Indep	Yes[1]	R N	1882
Sherwood Sanitarium	Gen	10	7	Indiv	No	M D	1905
St Johnsbury 8 028—Caledonia							
Brightlook Hospital	Gen	54	35	Indep	Yes[1]	R N	1898
St Johnsbury Hospital	Gen	21	16	Church	No	R N	1895
Springfield 5 285—Windsor							
Springfield Hospital	Gen	30	18	Indep	No	R N	1914
Vergennes 1 609—Addison							
Vermont State Industrial School -	Gen	37	10	State	No	Lay	1875
Waterbury 1 515—Washington							
Vermont State Hospital for the Insane	N&M	870	860	State	Yes	M D	1891

VERMONT—Cont City Pop—County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt M D R N Lay	Year Est
Windsor 3 061—Windsor							
Vermont State Prison Hospital²	Gen	8	4	State	No	Lay	1809
Winooski, 4 932—Chittenden							
Fanny Allen Hospital▲	Gen	71	40	Church	Yes¹	R N	1894

Total registered hospitals in Vermont, 35 capacity 2 853 average census 2 487 Hospitals not admitted to the register 0, capacity 0

VIRGINIA City, Pop—County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt M D R N Lay	Year Est
Abingdon 2 532—Washington							
George Ben Johnson Memorial Hospital▲	Gen	53	38	Indep	Yes¹	Lay	1917
Alexandria 18 473—Arlington							
Alexandria Hospital	Gen	50	40	Indep	Yes¹	R N	1872
Appalachia 2 036—Wise							
Appalachia Masonic Hosp	Gen	12	5	Frat	No	M D	1925
Bon Air, 62—Chesterfield							
Virginia Home and Industrial School for Girls	Gen	8	2	State	No	Lay	1910
Bristol 6 729—Washington							
King's Mountain Memorial Hospital	Gen	50	20	Indep	Yes	R N	1925
Brook Hill 18—Henrico							
Pine Camp Hospital	TB	92	87	City	No	M D	1910
Burkeville 514—Nottoway							
Piedmont Sanatorium	TB	146	140	State	Yes¹	M D	1918
Catawba Sanatorium 55—Roanoke							
Catawba Sanatorium	TB	325	315	State	Yes¹	Lay	1909
Martha Jefferson Hospital	Gen	50	35	Indep	Yes¹	R N	1903
Charlottesville 11 211—Albemarle							
Blue Ridge Sanatorium	TB	250	120	State	Yes¹	M D	1920
Chase City 1 646—Mecklenburg							
Chase City Hosptial	Gen	26	7	Indep	Yes	M D	1921
Christiansburg 1 641—Montgomery							
New Altamont Hospital	Gen	25	8	Indep	No	M D	1922
Clifton Forge 6 164—Alleghany							
Chesapeake and Ohio Railway Hospital▲	Indus	105	51	Indus	Yes¹	R N	1897
Clintwood 460—Dickenson							
Sutherland's Hospital	Gen	12	3	Indiv	No	M D	1925
Colony 50—Amherst							
State Colony for Epileptics and Feebleminded	N&M	800	787	State	No	M D	1911
Dante 811—Russell							
Clinchfield Hospital	Gen	20	12	Indep	No	R N	1908
Danville 22 958—Pittsylvania							
Edmunds Hospital	Gen	60	30	Indiv	Yes¹	R N	1910
Hilltop Sanatorium	TB	40	35	City	No	R N	1915
Hughes Memorial Hospital	Gen	100	35	Indep	Yes¹	Lay	1898
Providence Hospital	Gen	50	[illegible]	Indep	Yes	R N	
Falls Church 1 659—Fairfax							
Gundry Training School for the Feebleminded	Fe Mi	100	90	Indiv	No	Lay	1893
Farmville 2,586—Prince Edward							
Southside Community Hosp	Gen	48	New	Indep	No	R N	1927
State Teachers College Infirmary²	Gen	30	8	State	No	M D	1901
Floyd 390—Floyd							
Floyd Hospital	Gen	14	4	Indiv	No	M D	1920
Fort Eustis, 2 890—Warwick							
Station Hospital	Gen	100	40	Army	No	M D	1918
Fort Humphreys —— Fairfax							
Station Hospital	Gen	29	12	Army	No	M D	1918
Fort Myer 1 050—Arlington							
Station Hospital	Gen	61	14	Army	No	M D	1863
Fortress Monroe 1 265—Elizabeth							
Station Hospital	Gen	90	3	Army	No	M D	1818
Fredericksburg 5 882—Spotsylvania							
Mary Washington Hosp	Gen	40	40	Indep	Yes¹	R N	1899
Front Royal 1 404—Warren							
Station Hospital	Gen	7	2	Army	No	M D	[illegible]
Galax 1 250—Grayson							
Galax Hospital and Clinic	Gen	50	16	Part	Yes	M D	1925
Hampton 6 138—Elizabeth City							
Hampton and Dixie Hospital	Gen	65	28	Indep	Yes¹	R N	1891
Harrisonburg 5 875—Rockingham							
Rockingham Memorial Hospital	Gen	102	56	Cy&Co	Yes¹	R N	1912
Hollins 65—Roanoke							
Susanna Memorial Infirmary of Hollins College²	Gen	21	6	Indep	No	M D	1911
Hopewell 1 397—Prince George							
Hopewell Hospital³	Gen	30	12	Indiv	No	Lay	1915
Hot Springs 1 010—Bath							
Community Hospital	Gen	8	[illegible]	Indep	No	R N	1913
Langley Field —— Elizabeth City							
Station Hospital	Gen	50	20	Army	No	M D	1917
Lawrenceville 1 439—Brunswick							
Loulie Taylor Letcher Memorial Hospital	Gen	25	New	Indep	No	M D	1927
Lebanon 469—Russell							
St Ann's Hospital	Gen	14	9	Indiv	No	M D	1920
Leesburg 1 545—Loudoun							
Loudoun Hospital	Gen	[illegible]	18	Indep	Yes¹	R N	1912
Lexington 2 870—Rockbridge							
Stonewall Jackson Memorial Hospital	Gen	58	17	Indep	No	R N	1912
Virginia Military Institute Hospital²	Gen	40	6	State	No	M D	1839
Lynchburg 30 500—Campbell							
Lynchburg General Hospital▲	Gen	75	59	City	Yes¹	Lay	1885
Marshall Lodge Memorial Hospital▲	Gen	[illegible]	[illegible]	Frat	Yes¹	R N	1896
Virginia Baptist Hospital▲	Gen	102	40	Church	Yes¹	R N	1921
Maidens 25—Goochland							
Virginia Industrial School for Boys	Gen	20	4	State	No	Lay	1893
Marion 3 253—Smyth							
Southwestern State Hosp	N&M	901	813	State	No	M D	1887
Martinsville 4 075—Henry							
Shackelford Hospital	Gen	54	14	Indiv	No	R N	1921
National Soldiers Home 3 875—Elizabeth City							
National Soldiers' Home▲	Gen	668	552	Fed	No	M D	1867
Newport News 48 800—Warwick							
Elizabeth Buxton Hospital▲	Gen	64	50	Indiv	Yes¹	R N	1906
Riverside Hospital▲	Gen	65	39	Indep	Yes¹	Lay	1916
Whittaker Memorial Hosp	Gen	50	15	Indep	Yes	R N	1912
Norfolk 174 000—Norfolk							
Children's Hospital and Clinic of the Norfolk City Union of Kings Daughters	Chil	14	7	Indep	No	R N	1915
Children's Summer Camp	TB	30	50	Indep	No	Lay	1910
City Contagious Disease Hospital	Iso	60	[illegible]	City	No	R N	1919
Florence Crittenton Home	Mater	6	3	Indep	No	Lay	1894
Hospital of St Vincent de Paul*▲	Gen	228	160	Church	Yes¹	R N	1856
Mount Sinai Hospital	Gen	50	19	Indep	No	R N	1920
Norfolk Municipal Hosp	Gen	200	200	Cy	No	Lay	[illegible]
Norfolk Protestant Hosp*▲	Gen	150	95	Church	Yes¹	R N	1888
Sarah Leigh Hospital*▲	Gen	70	50	Indep	Yes¹	R N	1905
United States Marine Hospital No 82*▲	Gen	236	174	USPHS	No	M D	1798
United States Naval Hospital*▲	Gen	816	532	Navy	No	M D	1830
Norton 3 068—Wise							
Norton Hospital	Gen	30	18	*Indep*	No	M D	1920
Pearisburg 537—Giles							
St Elizabeth's General Hospital	Gen	20	10	Indep	No	R N	1921
Petersburg 36 400—Dinwiddie							
Central State Hospital	N&M	2 370	2 287	State	No	M D	1870
Crowder Memorial Hospital	Gen	20	5	Indiv	No	R N	1915
Petersburg Hospital▲	Gen	70	52	Indep	Yes¹	R N	1885
Portsmouth 59 900—Norfolk							
Kings Daughters' Hospital▲	Gen	68	40	Church	Yes¹	R N	1889
Parrish Memorial Hosp▲	Gen	40	23	Indep	Yes¹	R N	1920
Pulaski 5 282—Pulaski							
Pulaski Hospital	Gen	30	16	Indep	Yes	R N	1926
Radford 4 627—Montgomery							
St Alban's Sanatorium	N&M	35	25	Indiv	No	M D	1915
Richlands 1 171—Tazewell							
Mattie Williams Hospital	Gen	30	18	Indiv	Yes¹	R N	1915
Richmond 189 000—Henrico							
City Home	Gen	50	30	City	No	Lay	[illegible]
Convalescent Home Hosp	Conv	35	25	Indiv	No	Lay	[illegible]
Crippled Children's Convalescent Hospital	Ortho	30	25	Indep	No	Lay	1924
Grace Hospital▲	*Gen*	*50*	*33*	*Indep*	*Yes¹*	*R N*	*1911*
Hygeia Hospital	Gen	50	35	Indiv	Yes¹	R N	1903
Johnston Willis Hospital▲	Gen	82	62	Indep	Yes¹	R N	1909
Lee Camp Soldiers Home Hospital	Gen	100	40	State	No	M D	1884
Medical College of Virginia Hospital Division*▲	Gen	421	253	Indep	Yes¹	M D	1901
Penitentiary Hospital³	Gen	21	10	State	No	Lay	
Retreat for Sick▲	Gen	90	50	Indep	Yes¹	R N	1879
St Elizabeth's Hospital+▲	Gen	50	33	Indep	Yes¹	Lay	1912
St Luke's Hospital▲	Gen	81	68	Indep	Yes¹	R N	1887
St Sophia's Home for Aged²	Gen	38	58	Church	No	Lay	1874
Sarah G Jones Memorial Hospital	Gen	25	8	Indep	Yes	M D	[illegible]
Schermerhorn's School	N&M	15	10	Indiv	No	Lay	1917
Sheltering Arms Free Hospital	Gen	60	30	Indep	Yes¹	R N	[illegible]
Stuart Circle Hospital▲	Gen	84	54	Indep	Yes¹	R N	[illegible]
Tucker Sanatorium▲	N&M	50	33	Indep	Yes¹	Lay	1912
Virginia Home for Incurables	Incur	60	60	Indep	No	Lay	[illegible]
Westbrook Sanatorium	N&M	150	[illegible]	Indep	No	M D	1911
Roanoke 61 900—Roanoke							
Burrell Memorial Hospital	Gen	46	20	Indep	Yes¹	M D	1915
Gill Memorial Eye Ear and Throat Hospital	EENT	20	4	Indiv	No	Lay	[illegible]
Jefferson Hospital▲*	Gen	100	87	Part	Yes¹	M D	1908
Lewis-Gale Hospital▲	Gen	59	40	Part	Yes¹	R N	1909
Roanoke Hospital▲	Gen	98	50	*Indep*	Yes¹	R N	1899
St Charles Hospital	Gen	25	15	Indiv	Yes	M D	[illegible]
Shenandoah Hospital▲	Gen	50	28	Indep	Yes¹	R N	1912
Salem 4 159—Roanoke							
Mount Regis Sanatorium	TB	[illegible]	[illegible]	Indep	Yes	M D	1914
Saltville 2 248—Smyth							
Mathieson Hospital	Indus	12	7	Indus	No	M D	1925
Schuyler 520—Nelson							
D J Carroll Mem Hosp	Gen	12	3	Indep	No	M D	[illegible]
South Boston 4 338—Halifax							
South Boston Hospital	Gen	24	12	Indiv	No	M D	1909
State Farm — Goochland							
State Farm Hospital	Gen TB	72	29	State	No	Lay	1894
Staunton 10 633—Augusta							
King's Daughters Hospital▲	Gen	57	30	*Church*	Yes¹	*R N*	*1892*
Virginia School for the Deaf and Blind	Gen	20	8	State	No	Lay	1839
Western Hospital	N&M	1 591	1 551	State	No	M D	1828
Stonega 251—Wise							
Stonega Hospital	Indus	18	5	Indus	No	M D	1898
Suffolk 9 704—Nansemond							
Lake View Hospital▲	Gen	60	35	Part	Yes¹	M D	1905
Virginia General Hospital²	Gen	20	15	Indep	No	R N	[illegible]
Sweet Briar 114—Amherst							
Sweet Briar Infirmary	Gen	20	1	Indep	No	M D	[illegible]

VIRGINIA—Cont City Pop —County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt MD RN Lay	Year Est
Toms Creek 781—Wise							
Toms Creek Hospital	Indus	15	5	Indus	No	MD	1915
University 1 125—Albemarle							
University of Virginia Hospital ★+▲	Gen	250	208	State	Yes[1]	MD	1901
Victoria 1 445—Lunnenburg							
Kendig Brothers Hospital	Gen	20	4	Part	No	RN	1920
Virginia Beach 846—Princess Anne							
Seaside Sanitarium	Chil	20	15	Part	No	MD	1926
Warrenton 1 545—Fauquier							
Fauquier County Hospital	Gen	25	11	Indep	No	RN	1925
Williamsburg 2 462—James City							
Eastern State Hospital	N&M	1 004	1 052	State	No	MD	1768
Winchester 6 883—Frederick							
Winchester Memorial Hosp ▲	Gen	69	48	Indep	Yes[1]	RN	1901

Total registered hospitals in Virginia 118 capacity 15 271 average census 12 003. Hospitals not admitted to the register 2 capacity 56

WASHINGTON City Pop —County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt MD RN Lay	Year Est
Aberdeen 16,174—Grays Harbor							
Aberdeen General Hospital ▲	Gen	83	77	Indep	No	RN	1899
St Joseph's Hospital ▲	Gen	53	35	Church	Yes[1]	Lay	1897
American Lake — Pierce							
United States Veterans Hospital No 94 ▲	N&M	400	399	VetBur	No	MD	1924
Anacortes 5 284—Skagit							
Anacortes Hospital	Gen	14	7	Indep	No	RN	1905
Arlington 1 418—Snohomish							
Arlington General Hospital	Gen	15	7	Part	No	RN	1905
Auburn 3 163—King							
Taylor Lacey Hospital	Gen	36	17	Indep	No	MD	1920
Bellingham 25 229—Whatcom							
Normal School Isolation Hospital -	Iso	12	1	State	No	RN	1924
St Joseph's Hospital ▲	Gen	100	20	Church	Yes[1]	Lay	1890
St Luke's Hospital ▲	Gen	85	50	Church	Yes[1]	RN	1892
Miss Smith's Private Hosp	Gen	11	5	Indiv	No	RN	1908
Bremerton 11 053—Kitsap							
United State Naval Hosp	Gen	255	111	Navy	No	MD	1895
Burlington 1 360—Skagit							
Burlington General Hosp	Gen	30	20	Indiv	No	Lay	1910
Camp Lewis 6 050—Pierce							
Station Hospital	Gen	75	30	Army	No	MD	1917
Chehalis 4 558—Lewis							
St Helen's Hospital	Gen	35	13	Church	No	RN	1907
State Training School for Boys -	Gen	25	2	State	No	Lay	1889
Clearlake 1 019—Skagit							
Clearlake Hospital	Indus	20	10	Indiv	No	MD	1913
Colfax 3 027—Whitman							
St Ignatius Hospital	Gen	50	39	Church	Yes[1]	RN	1893
College Place 445—Walla Walla							
Walla Walla Sanitarium ▲	Gen	50	14	Church	No	MD	1900
Colville 1 719—Stevens							
Mt Carmel Hospital	Gen	30	15	Part	No	RN	1910
Eatonville 861—Pierce							
Eatonville General Hospital	Gen	30	15	Indiv	No	MD	1908
Ellensburg 3 967—Kittitas							
Ellensburg General Hosp	Gen	30	20	Indep	No	RN	1919
Elma 1 253—Grays Harbor							
Elma General Hospital	Gen	14	9	Indiv	No	MD	1904
Oakhurst Sanatorium	TB	65	43	County	No	MD	1921
Everett 29 303—Snohomish							
General Hosp of Everett ▲	Gen	85	65	Indep	Yes[1]	RN	1894
Providence Hospital ▲	Gen	120	50	Church	Yes[1]	Lay	1905
Ft Casey 415—Island							
Station Hospital	Gen	10	2	Army	No	MD	1905
Ft Lawton — King							
Station Hospital	Gen	30	6	Army	No	MD	1902
Ft Steilacoom — Pierce							
Western State Hospital +	N&M	1 596	1 514	State	No	MD	1871
Ft Worden 14—Jefferson							
Station Hospital	Gen	52	7	Army	No	MD	1900
Friday Harbor 522—San Juan							
Friday Harbor Hospital	Gen	6	3	Indiv	No	Lay	1910
Hoquiam 11 126—Grays Harbor							
Hoquiam General Hospital	Gen	75	40	Indep	Yes[1]	MD	1903
Hunters 214—Stevens							
Hunters Emergency Hosp	Gen	8	3	Indiv	No	RN	1913
Ione 541—Pend Oreille							
Ione Hospital	Gen	10	6	Indiv	No	MD	1919
Klickitat 145—Klickitat							
Klickitat Hospital	Indus	6	2	Indus	No	RN	1925
Lake View 352—Pierce							
Mountain View Sanatorium	TB	130	120	County	No	RN	1915
Sunnycroft Sanatorium	N&M	10	6	Part	No	Lay	1925
Leavenworth 1 791—Chelan							
Cascade Sanitarium	Gen	50	18	Indep	No	MD	1914
Longview 6 025—Cowlitz							
Longview Memorial Hosp +	Gen	80	28	Indep	No	Lay	1925
McCleary 1 320—Grays Harbor							
McCleary General Hospital	Gen	20	5	Indiv	No	MD	1913
Medical Lake, 2 545—Spokane							
Eastern State Hospital	N&M	1 400	1 363	State	No	MD	1889
State Custodial School	N&M	1 050	900	State	No	Lay	1906
Miles 44—Lincoln							
Ft Spokane Indian Hosp	TB	25	22	Indian	No	MD	1916
Monroe 1 675—Snohomish							
Gale Hospital	Gen	10	3	Indiv	No	Lay	1924
Monroe General Hospital	Gen	10	5	Indiv	No	MD	1904
Snohomish County Hosp -	Gen	18	6	County	No	Lay	1892
Mt Vernon 3 341—Skagit							
Mt Vernon General Hosp	Gen	25	22	Indiv	No	RN	1919
Mt Vernon Maternity Hosp	Mater	12	5	Indiv	No	Lay	

WASHINGTON—Cont. City Pop —County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt MD RN Lay	Year Est
Newport 950—Pend Oreille							
Newport Hospital	Gen	20	12	Indep	No	RN	1924
Northport 906—Stevens							
Northport Hospital	Gen	18	8	Indiv	Yes	MD	1925
Okanogan 1 015—Okanogan							
Okanogan Hospital	Gen	9	6	Indiv	No	MD	1914
Olympia 7 795—Thurston							
Maxwell Maternity Home	Mater	15	11	Indiv	No	Lay	1919
St Peter's Hospital	Gen	75	30	Church	Yes[1]	Lay	1887
Omak 525—Okanogan							
Omak Hospital	Gen	14	8	Indiv	No	RN	1923
Oroville 1 031—*Okanogan*							
Oroville Hosp and Sanit	Gen	15	2	Indiv	No	MD	1916
Orting 972—Pierce							
State Soldiers Home -	Gen	52	27	State	No	Lay	1891
Pasco 3 362—Franklin							
Our Lady of Lourdes Hosp	Gen	56	18	Church	Yes[1]	RN	1916
Port Angeles Hospital and Sanitarium	Gen	60	30	Part	Yes	RN	1902
Pt Gamble 601—Kitsap							
McCormick General Hosp	Gen	83	20	Indiv	No	Lay	1926
Pt Townsend 2 817—Jefferson							
St John's Hospital	Gen	100	35	Church	No	RN	1890
United States Marine Hospital No 17 ▲	Gen	100	90	USPHS	No	MD	1855
Puyallup 6 323—Pierce							
Puget Sound Sanatorium	N&M	30	20	Part	No	MD	1909
Valley Hospital	Gen	30	15	Indiv	No	RN	1922
Raymond 4,260—Pacific							
Riverview Hospital	Gen	30	14	Indiv	No	Lay	1912
Renton 3 301—King							
Renton Hospital	Gen	30	12	Indiv	No	MD	1911
Republic 781—Ferry							
Republic Hospital	Gen	8	3	Indiv	No	MD	1916
Retsil 659—Kitsap							
Washington Veterans Home and Hospital	Gen	250	225	State	No	Lay	1912
Richmond Highlands 34—King							
Firland Sanatorium	TB Iso	280	225	City	Yes	MD	1911
Roslyn 2 673—Kittitas							
Roslyn Cle Elum Beneficial Company	Indus	26	17	Indus	No	MD	1900
Seattle 315 685—King							
Childen's Orthopedic Hosp ▲	Ortho	150	100	Indep	Yes	RN	1907
Children's Sanitarium	Chil	9	7	Indiv	No	Lay	1915
Columbus Hospital ★▲	Gen	200	100	Church	Yes[1]	Lay	1916
Florence Crittenton Home	Mater	9	1	Indep	No	Lay	1899
King County Hospital ★	Gen	203	188	County	No	MD	1892
Laurel Beach Sanatorium	TB	50	44	Part	No	RN	1921
Longview Sanitarium	Conv	12	2	Part	No	RN	1921
Mason Home	Incur	24	15	Indep	No	Lay	
Meadows Sanatorium	N&M	40	32	Indep	No	Lay	1918
Meridian Convalescent Sanitarium	Conv	30	20	Indiv	No	Lay	1918
Minor Hospital ▲	Gen	70	57	Church	Yes[1]	RN	1906
Mt Baker Sanitarium	Conv	12	6	Indiv	No	RN	1919
Norwegian Hospital	Gen	30	15	Indep	No	RN	1915
Providence Hospital ▲	Gen	291	240	Church	Yes[1]	Lay	1878
Riverton Sanatorium	TB	60	45	Indep	No	RN	1908
St Luke's Hosp in Seattle ▲	Gen	50	27	Indep	No	Lay	1918
Seattle City Hospital ★▲	Gen	119	85	City	Yes[1]	RN	1909
Seattle General Hospital ★▲	Gen	100	90	Church	Yes[1]	RN	1889
Swedish Hospital ★▲	Gen	168	101	Indep	Yes[1]	RN	1908
University of Washington Health Service Infirmary "	Gen	36	4	State	No	MD	1909
Virginia Mason Hospital ★▲	Gen	100	75	Indep	Yes[1]	RN	1920
Sedro Woolley 3 389—Skagit							
Northern State Hospital +	N&M	1 330	1 290	State	No	MD	1911
Valley Hospital	Gen	18	10	Indiv	No	Lay	1922
Sequim 402—Clallam							
Sequim Prairie Hospital	Gen	12	3	Indiv	No	Lay	1924
Shelton 984—Mason							
Shelton General Hospital	Gen	36	19	Indep	No	RN	1920
Snohomish 2 985—Snohomish							
Aldercrest Sanatorium	TB	40	37	County	No	Lay	1918
Snohomish General Hospital	Gen	15	5	Indiv	No	RN	1900
Snoqualmie Falls 362—King							
Snoqualmie Falls Hospital	Gen	44	27	Indep	No	RN	1920
South Bend 1 948—Pacific							
South Bend General Hosp	Gen	35	15	Indep	No	Lay	1903
Spangle 291—Spokane							
Spokane County Infirmary	Gen	22	22	County	No	Lay	1889
Spokane 109 000—Spokane							
Edgecliff Sanatorium	TB	160	116	County	No	MD	1914
Maria Beard Deaconess Hospital ★▲	Gen	155	128	Church	Yes[1]	Lay	1896
Payne Private Sanatorium	N&M	10	5	Indiv	No	Lay	1916
Rivercrest Hospital	Iso	90	15	City	No	MD	1906
Sacred Heart Hospital ▲	Gen	300	225	Church	Yes[1]	Lay	1886
St Luke's Hospital ★▲	Gen	175	130	Church	Yes[1]	Lay	1900
Salvation Army Women's Hospital	Mater	48	20	Church	No	Lay	1896
Spokane Children's Home -[3]	Chil	13	4	Indep	No	Lay	1882
Station Hospital	Gen	41	14	Army	No	MD	1895
Sprague 822—Lincoln							
Sprague Hospital	Gen	10	5	Indiv	No	Lay	1905
Sumas 854—Whatcom							
Sumas General Hospital	Gen	12	7	Indiv	No	MD	1908
Tacoma 106 000—Pierce							
Northern Pacific Beneficial Association Hospital ★	Gen	135	75	Indep	No	Lay	1904
Pierce County Hospital ▲	Gen	133	106	County	No	MD	1889
St Joseph's Hospital ▲	Gen	300	180	Church	Yes[1]	Lay	1891
Tacoma General Hospital ★▲	Gen	210	106	Indep	Yes[1]	Lay	188
United States Veterans Hospital No 59 ▲	Gen	296	233	VetBur	No	MD	1920
White Shield Home	Mater	10	4	Indep	No	Lay	1889

WASHINGTON—Cont City Pop—County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt MD RN Lay	Year Est
Tonasket 530—Okanogan							
Tonasket Hospital	Gen	10	6	Indiv	No	MD	1925
Tulalip 620—Snohomish							
Tulalip Indian School Hosp	Gen	12	1	Indian	No	Lay	1909
Vancouver 14 526—Clarke							
St Joseph's Hospital	Gen	85	60	Church	Yes[1]	RN	1910
Station Hospital	Gen	60	30	Army	No	MD	1849
Washington School for the Deaf -	Gen	18	5	State	No	Lay	1886
Walla Walla 15 503—Walla Walla							
St Mary's Hospital ▲	Gen	100	60	Church	Yes[1]	Lay	1880
United States Veterans Hospital No 85 ▲	TB	250	180	VetBur	No	MD	1922
Walla Walla Valley General Hospital	Gen	50	23	Indep	Yes[1]	RN	1927
Washington State Penitentiary Hospital	Gen	30	25	State	No	Lay	1887
Wenatchee 6 324—Chelan							
Central Washington Deaconess Hospital	Gen	0	30	Church	Yes[1]	RN	191[illegible]
St Anthony's Hospital	Gen	50	45	Church	Yes[1]	Lay	1916
Yakima 22 664—Yakima							
St Elizabeth's Hospital ▲	Gen	140	112	Church	Yes[1]	Lay	1891
Yakima Sanit and Hosp	Gen	25	10	Indep	No	Lay	1926

Total registered hospitals in Washington 129 capacity 13 923 average census 10 623 Hospitals not admitted to the register 11 capacity 161

WEST VIRGINIA City Pop—County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt MD RN Lay	Year Est
Beckley 7 054—Raleigh							
Beckley Hospital ▲	Gen	75	43	Part	No	MD	1913
King's Daughters General Hospital	Gen	75	19	Indep	Yes	MD	1922
Bluefield 19 347—Mercer							
Bluefield Sanitarium ▲	Gen	94	42	Indep	Yes[1]	RN	1902
Lomax Hospital	Gen	37	20	Indiv	Yes	MD	1912
St Luke's Hospital ▲	Gen	75	32	Indiv	Yes[1]	RN	1904
Buckhannon 3 785—Upshur							
Buckhannon Hospital	Gen	35	20	Part	Yes[1]	MD	1915
St Joseph's Hospital	Gen	32	14	Church	Yes	Lay	1921
Charleston 50 700—Kanawha							
Charleston General Hosp ★▲	Gen	150	100	Indep	Yes[1]	MD	1905
Churchman Eye and Ear Hospital	EENT	16	5	Part	No	MD	1921
Hill Crest Sanatorium	TB	31	26	County	No	Lay	1912
Kanawha Valley Hospital	Gen	70	40	Indep	Yes[1]	RN	1914
Dr Lewis Prichard Free Clinical Hospital	Gen	32	15	Church	No	MD	1919
McMillan Hospital	Gen	50	27	Indiv	Yes[1]	MD	1910
Mountain State Hospital ▲	Gen	110	69	Indep	Yes[1]	MD	19[illegible]2
St Francis Hospital	Gen	80	35	Church	Yes[1]	RN	1914
Staats Hospital[3]	Gen	22	16	Indiv	No	MD	192[illegible]
Charles Town 2 527—Jefferson							
Charles Town General Hosp	Gen	30	12	Indep	No	RN	1912
Clarksburg 30 402—Harrison							
Mason Hospital	Gen	42	35	Indep	Yes[1]	MD	1917
St Mary's Hospital ▲	Gen	175	75	Church	Yes[1]	Lay	1904
Williams Hospital	Gen	12	4	Indiv	No	MD	1924
Davis 2 491—Tucker							
Allegheny Heights Hospital	Gen	20	8	Indiv	No	MD	1909
Denmar — Pocahontas							
State Colored Tuberculosis Sanitarium	TB	70	58	State	No	MD	1919
Elkins 8 000—Randolph							
Davis Memorial Hospital ▲	Gen	50	25	Indep	Yes[1]	MD	190
Elkins City Hospital ▲	Gen	50	20	Indiv	Yes[1]	MD	1905
Elm Grove 1 937—Ohio							
Ohio County Home Farm	Gen	40	35	County	No	Lay	1870
Fairmont 20 959—Marion							
Cook Hospital ▲	Gen	68	54	Indep	Yes[1]	RN	1889
Fairmont Hospital No 3 +▲	Gen	75	52	State	Yes[1]	MD	1901
Glen Dale 213—Marshall							
Reynolds Memorial Hosp	Gen	75	40	Church	Yes[1]	RN	1899
Grafton 8 861—Taylor							
Grafton City Hospital	Gen	20	16	City	No	RN	1904
Hinton 3 912—Summers							
Hinton Hospital	Gen	65	36	Indep	Yes[1]	MD	1901
Hopemont 65—Preston							
State Tuberculosis Sanit	TB	400	370	State	Yes	MD	1913
Huntington 65 500—Cabell							
Barnett Hospital	Gen	60	23	Indiv	Yes[1]	MD	1912
Chesapeake and Ohio Railway Hospital +	Indus	69	54	Indus	Yes[1]	RN	1890
Guthrie Hospital ▲	Gen	67	53	Indiv	Yes[1]	RN	1910
Hawes Marple Hospital	EENT	16	8	Indiv	No	MD	1918
Huntington Children's Hospital[3]	Chil	60	45	Indep	Yes[1]	RN	1923
Huntington Eye Ear and Throat Hospital	EENT	10	3	Indiv	No	MD	1914
Huntington State Hospital	N&M	1 008	1 000	State	No	MD	1895
Huntington Union Mission Settlement[3]	Chil	12	12	Indep	No	Lay	1913
Kessler Hatfield Hospital	Gen	150	105	Indep	Yes[1]	Lay	1904
St Mary's Hospital	Gen	40	18	Church	Yes[1]	RN	1924
Salvation Army Hospital	Gen	12	7	Church	No	RN	1915
Kenova 2,162—Wayne							
Rife Ferguson Hospital	Gen	10	6	Part	No	RN	1924
Keyser 6 003—Mineral							
Hoffman Hospital	Gen	50	25	Indiv	Yes[1]	MD	1903
Kimball 1 428—McDowell							
Harrison Memorial Hosp	Gen	25	2	Indiv	No	MD	1921
Lakin — Mason							
State Hospital for Colored Insane	N&M	[illegible]25	230	State	No	MD	1925
Logan 2 998—Logan							
Logan Hospital	Gen	90	60	Part	Yes[1]	MD	1919
Lundale 575—Logan							
Lundale Hospital[3]	Indus	35	15	Indus	No	MD	1918
Marlinton 1 177—Pocahontas							
Marlinton General Hospital and Sanitarium[3]	Gen	50	24	Indep	No	MD	1906
Martinsburg 13 844—Berkeley							
City Hospital ▲	Gen	65	30	Indep	Yes[1]	MD	1905
King's Daughters Hospital	Gen	62	19	Indep	Yes[1]	RN	1896
McKendree 117—Fayette							
McKendree Hospital No 2 ▲	Gen	60	44	State	Yes[1]	MD	1900
Montgomery 2 130—Fayette							
Coal Valley Hospital ▲	Gen	65	60	Indep	Yes[1]	RN	1919
Morgantown 13 811—Monongalia							
City Hospital	Gen	30	15	Indiv	Yes[1]	RN	1900
Eastmont Tuberculosis Sanatorium	TB	30	20	Indep	No	RN	1926
Monongalia County Hosp	Gen	50	38	County	Yes[1]	RN	
Moundsville 11 660—Marshall							
Grand View Sanatorium	TB	35	11	County	No	MD	1924
West Virginia Penitentiary Hospital -	Gen	65	63	State	No	MD	1868
New Martinsville 2 341—Wetzel							
Wetzel County Hospital	Gen	15	10	County	No	RN	1920
Oak Hill 1 036—Fayette							
Oak Hill Hospital	Gen	50	16	Part	No	MD	1919
Parkersburg 21 299—Wood							
Camden Clark Mem Hosp	Gen	57	11	City	Yes[1]	RN	1897
St Joseph's Hospital	Gen	90	50	Church	Yes[1]	Lay	1900
Princeton 6 224—Mercer							
Memorial Hospital	Gen	50	28	Part	Yes[1]	Lay	1918
Princeton Hospital	Gen	40	20	Indep	Yes[1]	RN	1913
Richwood 4 331—Nicholas							
McClung Hospital	Gen	50	30	Indiv	Yes[1]	MD	1905
Sacred Heart Hospital	Gen	35	18	Indiv	Yes[1]	Lay	1912
Romney 1 098—Hampshire							
West Virginia Schools for the Deaf and Blind	Gen	15	2	State	No	Lay	1870
Ronceverte 2 319—Greenbrier							
Greenbrier Valley Hospital	Gen	50	50	Indep	Yes	MD	1910
Sistersville 3 238—Tyler							
Sistersville General Hospital	Gen	7	2	Indiv	No	RN	1915
South Charleston 3 650—Kanawha							
Dunn Hospital	Gen	20	6	Indiv	No	MD	1916
Spencer 1 765—Roane							
Spencer State Hospital	N&M	775	752	State	No	MD	1889
Welch 3 232—McDowell							
Grace Hospital	Gen	37	28	Part	No	MD	1924
Welch Hospital No 1▲	Gen	115	62	State	Yes[1]	MD	1900
Weston 5 701—Lewis							
City Hospital	Gen	30	18	Part	No	MD	1921
General Hospital of Weston	Gen	40	18	Indiv	Yes	RN	1920
Weston State Hospital	N&M	1 800	1 957	State	No	MD	1855
Wheeling 56 208—Ohio							
Ohio Valley General Hospital★▲	Gen	165	158	Indep	Yes[1]	MD	1890
Wheeling Hospital ★▲	Gen	225	114	Church	Yes[1]	R.N	1853
White Sulphur Springs 87—Greenbrier							
White Sulphur Springs	Conv	500	386	Indep	No	MD	1778

Total registered hospitals in West Virginia 79 capacity 8 776 average census 6 322 Hospitals not admitted to the register 2 capacity 33

WISCONSIN City Pop—County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt MD RN Lay	Year Est
Amery 1 203—Polk							
Polk County Hospital	Gen	15	4	Indep	No	RN	1917
Antigo 8 903—Langlade							
Antigo Hospital	Gen	16	10	Indiv	No	Lay	1901
City Hospital	Gen	25	15	Indep	No	Lay	1916
Appleton 21 140—Outagamie							
Outagamie County Asylum for Chronic Insane	N&M	185	183	County	No	Lay	1888
St Elizabeth's Hospital★▲	Gen	200	100	Church	No	RN	1900
Ashland 11 334—Ashland							
Ashland General Hospital	Gen	75	44	Indep	Yes[1]	R.N	1917
St Joseph's Hospital ★▲	Gen	150	85	Church	Yes[1]	RN	1881
Baraboo 5 538—Sauk							
St Mary's Ringling Hospital	Gen	25	14	Church	No	RN	1922
Barron 1 623—Barron							
Barron City Hospital[3]	Gen	22	15	Indiv	No	Lay	1904
River Side Hospital	Gen	9	4	Part	No	Lay	1914
Beaver Dam 7 992—Dodge							
Lutheran Deaconess Hosp	Gen	30	25	Church	Yes	RN	1922
Beloit 24 771—Rock							
Beloit College Infirmary	Gen	10	4	Indep	No	RN	1925
Beloit Detention Hospital	Iso	12	4	City	No	MD	1906
Beloit General Hospital[3]	Gen	18	8	Part	No	RN	1901
Beloit Hospital	Gen	25	10	Indep	No	MD	1907
H P Strong Emergency Hospital	Gen	18	7	Indep	No	RN	1899
Boscobel 1 670—Grant							
Brookside-Parker Hospital	Gen	22	14	Part	No	MD	1916
Burlington 3 626—Racine							
Burlington Memorial Hosp	Gen	25	15	Indep	No	RN	1923
Chippewa Falls 9 214—Chippewa							
Chippewa County Chronic Insane Asylum	N&M	210	196	County	No	Lay	1895
Northern Colony and Training School	N&M	1 200	1 100	State	No	MD	1897
St Joseph's Hospital	Gen	175	100	Church	No	RN	1885
Columbus 2 460—Columbia							
St Mary's Hospital	Gen	25	10	Church	No	Lay	1907
Cumberland 1 528—Barron							
Island City Hospital	Gen	16	12	Part	No	RN	1916

WISCONSIN—Cont City Pop—County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt MD RN Lay	Year Est
Dodgeville 1 896—Iowa							
Dodgeville General Hospital	Gen	16	8	Indep	No	Lay	1925
Iowa County Insane Asylum	N&M	150	130	County	No	Lay	1885
St Joseph s Hospital▲	Gen	51	27	Church	No	R N	1913
Dousman 235—Waukesha							
Wisconsin Masonic Home and O E S Hospital -	Gen	20	10	Frat	No	Lay	1924
Eau Claire 22,375—Eau Claire							
Eau Claire County Insane Asylum	N&M	190	180	County	No	Lay	1901
Luther Hospital▲	Gen	115	85	Indep	Yes[1]	R N	1907
Mt Washington Sanatorium	TB	55	53	County	No	R N	1913
Sacred Heart Hospital	Gen	225	185	Church	Yes[1]	Lay	1890
Edgerton 2,088—Rock							
Edgerton Memorial Hosp	Gen	21	2	City	No	R N	1923
Elkhorn 1 991—Walworth							
Walworth County Hosp	Gen	15	12	County	No	Lay	1852
Ellsworth 1 013—Pierce							
Ellsworth Hospital	Gen	8	4	Indiv	No	M D	1926
Fond du Lac 26 049—Fond du Lac							
Fond du Lac County Insane Asylum	N&M	255	252	County	No	Lay	1886
St Agnes Hospital★▲	Gen	214	143	Church	Yes[1]	R N	1895
Ft Atkinson 4 915—Jefferson							
Fort Atkinson General Hospital	Gen	15	9	Indiv	No	M D	1919
Frederic 602—Polk							
Frederic Hospital	Gen	13	8	Indiv	No	R N	1915
Green Bay 34 930—Brown							
Bellin Memorial Hospital	Gen	125	74	Church	Yes[1]	M D	1909
Brown County Insane Asylum	N&M	140	140	County	No	M D	1888
City Isolation Hospital[3]	Iso	16	4	City	No	M D	1890
Orphan and Rescue Home	Mater	10	6	Indep	No	Lay	1920
St Mary s Mothers and Infants Home and St Mary s Hospital▲	Gen	88	59	Church	Yes[1]	R N	1900
St Vincent s Hospital	Gen	190	145	Church	No	Lay	1888
Wisconsin State Reformatory Hospital -	Gen	12	1	State	No	Lay	1898
Hartford 4 515—Washington							
St Joseph s Hospital	Gen	16	10	Church	No	Lay	1920
Hayward 1 302—Sawyer							
Hayward Hospital	Gen	6	4	Indiv	No	M D	1917
Hillsboro 950—Vernon							
Hansberry Hospital	Gen	20	14	Indiv	No	R N	1907
Hudson 3 014—St Croix							
Hudson Sanatorium	Gen	50	40	Indep	Yes	M D	1915
Itasca 315—Douglas							
Douglas County Asylum Home and Sanatorium	N&M	300	284	County	No	Lay	1909
Janesville, 20 785—Rock							
Detention Hospital	Iso	8	4	City	No	Lay	1896
Mercy Hospital▲	Gen	120	55	Church	Yes[1]	R N	1907
Rock County Ayslum and Home for the Poor -	Gen	14	6	County	Yes	Lay	1887
Wisconsin School for the Blind[2]	Gen	10	7	State	No	Lay	1850
Jefferson 2 572—Jefferson							
Brewer s Hospital	Gen	6	3	Indiv	No	Lay	1904
Forest Lawn Sanatorium	TB	52	52	County	No	R N	1921
Jefferson County Insane Asylum	N&M	250	177	County	No	Lay	1880
St Coletta Institute -	N&M	8	4	Church	No	Lay	1904
Juneau 1 159—Dodge							
Dodge County Insane Asylum and Poor House	N&M	178	160	County	No	Lay	1860
Kenosha 52 700—Kenosha							
Kenosha Hospital▲	Gen	150	78	Indep	Yes[1]	R N	1903
St Catharine s Hospital and Sanatorium▲	Gen	60	42	Church	No	R N	1917
Willowbrook Sanatorium	TB	38	35	County	No	Lay	1916
Keshena 207—Shawano							
Keshena Indian Hospital	Gen	30	15	Indian	No	M D	1884
La Crosse 30 400—La Crosse							
Grandview Hospital▲	Gen	102	79	Indep	Yes[1]	R N	1914
La Crosse Lutheran Hospital★▲	Gen	145	84	Church	Yes[1]	Lay	1899
Methodist Hospital of La Crosse	Gen	40	35	Church	No	R N	1900
St Francis Hospital★▲	Gen	200	165	Church	Yes[1]	R N	1883
Ladysmith 3 581—Rusk							
St Mary s Hospital	Gen	35	24	Church	Yes[1]	R N	1918
Lake Geneva 2 632—Walworth							
Crane Farms	Conv	12	7	Indus	No	Lay	1912
Lake Geneva Sanitarium	N&M	55	14	Indep	No	M D	1883
Lancaster 2 485—Grant							
Drs Doolittle Hospital	Gen	15	8	Part	No	M D	1911
Grant County Asylum	N&M	210	159	County	No	Lay	1847
Laona 1 820—Forest							
Ovitz Hospital	Gen	16	10	Indep	No	Lay	1918
Little Chute 2,017—Outagamie							
Riverview Sanatorium	TB	32	32	County	No	Lay	1913
Madison 47 600—Dane							
East Washington Hospital	Iso	55	20	City	No	R N	1924
Madison General Hosp★▲	Gen	119	81	Indep	Yes[1]	R N	1898
Madison Methodist Hosp▲	Gen	125	45	Church	Yes[1]	R N	1921
Morningside Sanatorium	TB	30	20	Indep	No	M D	1917
St Mary s Hospital★▲	Gen	175	110	Church	Yes[1]	R N	1912
South Shore Health Resort	Conv	20	19	Indiv	No	M D	1902
State of Wisconsin General Hospital★+▲	Gen	450	315	State	Yes[1]	M D	1924
Manawa, 727—Waupaca							
Manawa Hospital	Gen	7	4	Indiv	No	M D	1904
Manitowoc 22,132—Manitowoc							
Holy Family Hospital▲	Gen	100	73	Church	Yes[1]	Lay	1899
Manitowoc County Insane Asylum	N&M	200	200	County	No	Lay	18 5
Marinette 13 610—Marinette							
Marinette and Menominee Hospital	Gen	60	32	Indep	No	Lay	1883

WISCONSIN—Cont City Pop—County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt MD RN Lay	Year Est
Marshfield 7 394—Wood							
St Joseph s Hospital★▲	Gen	150	110	Church	Yes[1]	Lay	1891
Mauston 1 966—Juneau							
Mauston Hospital	Gen	45	20	Indep	No	M D	1923
Medford 1 881—Taylor							
Medford Clinic Hospital	Gen	20	15	Indep	No	R N	1920
Mendota 112—Dane							
Wisconsin Memorial Hosp	N&M	279	269	State	No	M D	1921
Wisconsin State Hospital for Insane	N&M	727	720	State	No	M D	1860
Menomonie 5 104—Dunn							
Dunn County Asylum	N&M	117	117	County	No	Lay	1892
Menomonie City Hospital	Gen	29	19	City	No	R N	1915
Merrill 8 068—Lincoln							
Holy Cross Hospital	Gen	50	27	Church	No	Lay	1926
Lincoln County Hospital	Gen	24	14	County	No	Lay	1919
Milwaukee 517 100—Milwaukee							
Columbia Hospital★▲	Gen	111	85	Indep	Yes[1]	Lay	1908
Concordia College Hosp -	Gen	27	2	Church	No	M D	1883
Evangelical Deaconess Hospital★▲	Gen	150	103	Church	Yes[1]	Lay	1909
Hanover General Hospital	Gen	100	28	Church	No	Lay	1914
Johnston Emergency Hosp+	Gen	35	18	City	No	R N	1888
Layton Home	Incur	32	30	Church	No	Lay	1907
Lincoln Hospital	Gen	16	12	Indiv	No	M D	1921
Marquette Univ Hosp★▲	Gen	155	87	Indep	Yes[1]	R N	1889
Milwaukee Children s Hospital+▲	Chil	150	134	Indep	Yes	R N	1894
Milwaukee Hospital★▲	Gen	200	175	Church	Yes[1]	Lay	1863
Milwaukee Maternity and General Hospital▲	Gen	95	62	Indep	Yes[1]	R N	1906
Misericordia Hospital+	Gen	100	65	Church	Yes[1]	R N	1908
Mt Sinai Hospital★▲	Gen	142	104	Indep	Yes[1]	Lay	1902
Ogden Hospital[3]	Gen	20	10	Indep	No	M D	1914
Roger Williams Hospital	Gen	30	11	Church	No	Lay	1926
Sacred Heart Sanitarium▲	Gen	225	125	Church	Yes	M D	1893
St Camillus Hospital and Invalid s Home	Gen	19	16	Church	No	Lay	1924
St Joseph s Hospital★▲	Gen	130	95	Church	Yes[1]	R N	1881
St Mary s Hill Sanitarium	N&M	110	100	Church	Yes[1]	Lay	1912
St Mary s Hospital★▲	Gen	178	165	Church	Yes	R N	1848
South Side Hospital	Gen	30	15	Indep	No	R N	1921
South View Hospital+	Iso	216	56	City	No	M D	1877
West Side Hospital	Gen	25	15	Indep	Yes	R N	1923
Mondovi 1,554—Buffalo							
Mondovi Hospital	Gen	10	4	Indiv	No	M D	1913
Monroe 4 788—Green							
Evangelical Deaconess Hosp	Gen	32	20	Church	No	Lay	1917
Green County Asylum	N&M	200	170	County	No	Lay	1882
National Home — Milwaukee							
Northwestern Branch National Home for Disabled Volunteer Soldiers▲	Gen	941	573	Fed	No	M D	1867
Neenah 7 171—Winnebago							
Theda Clark Memorial Hosp▲	Gen	52	32	Indep	Yes[1]	Lay	1910
New London 4 667—Waupaca							
Borchardt Clinic and Memorial Hospital	Gen	20	12	Indiv	No	M D	1925
New London Community Hospital	Gen	10	4	Indep	No	R N	1925
New Richmond 2 248—St Croix							
St Croix County Asylum for Chronic Insane	N&M	150	148	County	No	Lay	1893
Niagara 1 916—Marinette							
Niagara Hospital	Gen	12	6	Indus	No	M D	1925
Oconomowoc 3 301—Waukesha							
Oconomowoc Health Resort	N&M	75	69	Indep	No	M D	1905
Summit Hospital	Gen	50	25	Indep	No	M D	1888
Oconto 4 920—Oconto							
Oconto County and City Hospital	Gen	20	14	Indep	No	R N	1920
Onalaska 1 066—La Crosse							
Oak Forest Sanatorium	TB	60	60	County	No	R N	1918
Oshkosh 33 200—Winnebago							
Alexian Brothers Hospital	N&M	60	57	Church	No	Lay	1879
Mercy Hospital★	Gen	105	77	Church	Yes[1]	R N	1917
St Mary s Hospital	Gen	50	29	Church	No	Lay	1891
Park Falls 2,676—Price							
Park Falls Hospital	Gen	26	16	Indiv	No	M D	1912
Peshtigo 1,440—Marinette							
Marinette County Insane Asylum	N&M	194	189	County	No	Lay	1906
Pewaukee 800—Waukesha							
Oak Sanatorium	TB	38	35	County	No	R N	1918
Platteville 4 353—Grant							
Andrew Hospital	Gen	10	7	Indiv	No	M D	1921
Buck Hospital	Gen	10	5	Indiv	No	M D	1914
Wilson Cunningham Hosp	Gen	20	15	Indiv	No	M D	1920
Plymouth 3,415—Sheboygan							
Plymouth Hospital	Gen	35	29	Indep	No	R N	1917
Rocky Knoll Sanatorium	TB	80	72	County	No	R N	1926
Portage 5 582—Columbia							
St Saviors General Hosp	Gen	35	25	Church	No	Lay	1917
Prairie du Chiene 3 537—Crawford							
prairie du Chien Sanitarium and Hospital	Gen	70	32	Indep	Yes[1]	Lay	1902
Prescott, 892—Pierce							
Jones Hospital	Gen	20	10	Indiv	No	Lay	1895
Pureair — Bayfield							
Pureair Sanatorium	TB	70	60	County	Yes	M D	1918
Racine 69 400—Racine							
Lincoln Memorial Hospital	Iso	50	25	City	No	R N	1921
Racine County Asylum	N&M	234	234	County	No	Lay	1890
St Luke s Hospital	Gen	100	50	Church	Yes[1]	R N	1875
St Mary s Hospital▲	Gen	90	82	Church	No	R N	1882
Sunny Rest Sanatorium	TB	50	47	County	No	R N	1913
Reedsburg 2 997—Sauk							
Sauk County Farm and Asylum	N&M	256	200	County	No	Lay	1873

WISCONSIN—Cont

City Pop—County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt MD RN Lay	Year Est
Rhinelander 6 654—Oneida							
St Mary's Hospital	Gen	65	30	Church	No	R N	1895
Rice Lake 4 457—Barron							
Lakeside Methodist Hospital	Gen	30	16	Church	No	R N	1920
St Joseph's Hospital	Gen	33	16	Church	No	Lay	1917
Richland Center, 3 409—Richland							
Richland County Asylum	N&M	142	133	County	No	Lay	1895
Richland Hospital	Gen	20	10	Church	No	R N	
River Falls 2,273—Pierce							
City Hospital	Gen	10	4	City	No	R N	1921
St Francis 1 520—Milwaukee							
St Aemilian's Orphan Asylum	Chil	12	6	Church	No	Lay	1849
Shawano 3 544—Shawano							
Shawano Co Insane Asylum	N&M	180	174	County	No	Lay	1913
Sheboygan 34 000—Sheboygan							
St Nicholas Hospital	Gen	90	70	Church	No	Lay	1890
Sheboygan County Asylum	N&M	210	208	County	No	Lay	1882
Shorewood 2 650—Milwaukee							
Riverside Sanitarium	Gen	50	38	Indep	No	M D	1901
Shorewood Hospital	Gen	25	25	Indep	No	M D	1906
Shullsburg 1 158—Lafayette							
Dr Ennis Hospital	Gen	12	8	Indiv	No	R N	1913
South Milwaukee 7 598—Milwaukee							
South Milwaukee Hospital	Gen	16	10	Indiv	No	M D	1904
Sparta 4 466—Monroe							
Monroe Co Insane Asylum	N&M	102	97	County	No	Lay	1903
St Mary's Hospital	Gen	75	55	Church	Yes¹	R N	1915
Stanley 2,577—Chippewa							
Victory Hospital	Gen	15	9	Indep	No	R N	1919
Statesan 90—Waukesha							
Wisconsin State Sanat +	TB	200	165	State	No	M D	1906
Stevens Point, 13 200—Portage							
River Pines Sanatorium	TB	50	34	Indep	No	M D	1906
St Michael's Hospital	Gen	50	28	Church	No	Lay	1912
Stoughton 5 101—Dane							
Stoughton Community Hospital	Gen	17	10	City	No	R N	1904
Sturgeon Bay 4 553—Door							
Egeland Hospital	Gen	25	12	Indiv	No	Lay	1915
Superior 39 671—Douglas							
Good Samaritan Hospital	Gen	12	8	Church	No	Lay	1919
Isolation Hospital	Iso	25	6	City	No	M D	1900
St Francis Hospital	Gen	50	30	Church	No	Lay	1889
St Mary's Hospital ★▲	Gen	107	83	Church	Yes¹	R N	1891
Taycheedah 158—Fond du Lac							
Wisconsin Industrial Home for Women²	Gen	10	3	State	No	Lay	1921
Tomah 3 257—Monroe							
Tomah Indian School Hosp	Gen	17	5	Indian	No	Lay	1900
Tomahawk 2,898—Lincoln							
Sacred Heart Hospital	Gen	50	12	Church	No	R N	1894
Tomahawk Lake 2 898—Oneida							
Tomahawk Lake Camp for Tuberculous Convalescents	TB	20	20	State	No	Lay	1915
Union Grove 729—Racine							
Southern Wisconsin Colony	N&M	375	300	State	No	M D	1919
Verona 384—Dane							
Dane County Asylum for Chronic Insane	N&M	264	214	County	No	Lay	1883
Viroqua 2,574—Vernon							
Vernon County Asylum for the Insane	N&M	128	111	County	No	Lay	1888
Washburn 3 707—Bayfield							
Washburn Hospital	Gen	14	4	Indep	No	M D	1902
Watertown 9 467—Jefferson							
Bethesda Lutheran Home for Feebleminded and Epileptic	FeMi	500	250	Church	No	Lay	1904
St Mary's Hospital	Gen	50	30	Church	Yes¹	Lay	1914
Waukesha 14 720—Waukesha							
The Spa	Rheum	75	50	Part	No	Lay	1910
United States Veterans Hospital No 37 ▲	Gen	250	213	VetBur	No	M D	1919
Waukesha County Insane Asylum	N&M	215	210	County	No	Lay	1894
Waukesha Municipal Hosp	Gen	21	18	City	No	R N	1914
Waukesha Springs Sanit	N&M	50	40	Indep	No	M D	1898
Wisconsin Industrial School for Boys²	Gen	10	2	State	No	Lay	1860
Waupaca 2 839—Waupaca							
Christofferson Bros Hosp	Gen	12	4	Part	No	M D	1921
Waupun 4 440—Fond du Lac							
Central State Hospital for Insane	N&M	162	142	State	No	M D	1912
Wisconsin State Prison Hospital	Gen	20	10	State	No	M D	1902
Wausau 20 101—Marathon							
Marathon County Asylum for Chronic Insane²	N&M	170	147	County	No	Lay	1891
Marathon County Home and Hospital	Gen	35	20	County	No	Lay	1909
Mount View Marathon County Tuberculosis Sanatorium	TB	65	48	County	No	R N	1917
St Mary's Hospital ▲	Gen	125	75	Church	Yes¹	Lay	1907
Wausau Memorial Hosp ▲	Gen	89	53	Indep	Yes¹	R N	1924
Wauwatosa 5 818—Milwaukee							
Blue Mound Preventorium	TB	100	75	County	No	M D	1907
Milwaukee County Asylum for Chronic Insane	N&M	1 499	882	County	No	M D	1880
Milwaukee County Home for Children	Chil	65	26	County	No	Lay	1898
Milwaukee County Hosp ★+▲	Gen	508	300	County	Yes¹	M D	1880
Milwaukee Hospital for Insane	N&M	767	700	County	No	M D	1880
Milwaukee Sanitarium +	N&M	110	108	Indep	No	M D	1884
Muirdale Sanatorium for the Treatment of Tuberculosis +	TB	350	343	County	No	M D	1915

WISCONSIN—Cont

City Pop—County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt MD RN Lay	Year Est
Salvation Army Rescue Home	Mater	9	4	Church	No	Lay	1893
West Bend 3,378—Washington							
Dr Lynch's Sanatorium	Diab	15	12	Indiv	No	M D	1914
Washington County Asylum for Chronic Insane	N&M	152	147	County	No	Lay	1899
West Bend Sanitarium	Gen	7	3	Indiv	No	Lay	1912
West DePere 4 300—Brown							
Hickory Grove Sanatorium	TB	40	39	St&Co	No	R N	1915
West Salem 1 027—La Crosse							
La Crosse County Asylum for Insane³	N&M	210	205	County	No	Lay	1888
Weyauwega 938—Waupaca							
Waupaca Co Insane Asylum	N&M	150	143	County	No	Lay	1902
Whitehall 851—Trempealeau							
Trempealeau County Insane Asylum	N&M	130	120	County	No	Lay	1900
Whitehall Community Hosp	Gen	36	20	Indep	Yes¹	R N	1917
Whitelaw 269—Manitowoc							
Maple Crest Sanatorium	TB	41	38	County	No	R N	1913
Winnebago 1 120—Winnebago							
Northern Hosp for Insane³	N&M	663	640	State	No	M D	1873
Sunny View Sanatorium	TB	60	60	County	No	R N	1915
Winnebago County Asylum	N&M	237	235	County	No	Lay	1894
Wisconsin Rapids 7 243—Wood							
Riverview Hospital	Gen	35	20	Indep	No	Lay	1912
Wisconsin Veterans Home, 117—Waupaca							
Wisconsin Veterans Home	Gen	200	105	State	No	Lay	1887
Wittenberg 854—Shawano							
Wittenberg Hospital	Gen	12	6	Indep	No	Lay	1910
Wyocena 252—Columbia							
Columbia County Asylum	N&M	210	165	County	No	Lay	1890

Total registered hospitals in Wisconsin 225 capacity 24 393 average census 18 959 Hospitals not admitted to the register 7 capacity 219

WYOMING

City Pop—County	Type of Service	Beds	Aver Pts	Control	Nu Tr Sch	Supt MD RN Lay	Year 1st
Basin 1 009—Bighorn							
Basin Hospital	Gen	15	5	Indep	No	R N	1908
Wyoming Tuberculosis Sanatorium	TB	50	20	State	No	M D	1926
Buffalo 1 650—Johnson							
Wyoming Soldiers and Sailors Home²	Gen	10	5	State	No	Lay	1905
Burns 190—Laramie							
Burns Hospital	Gen	15	5	Part	No	M D	1922
Casper 23 288—Natrona							
Casper Private Hospital	Gen	30	5	Indiv	No	Lay	1912
Natrona Memorial Hospital	Gen	100	50	County	Yes¹	R N	1911
Cheyenne 13 202—Laramie							
Laramie Co Isolation Hosp	Iso	10	5	County	No	M D	1915
Laramie County Memorial Hospital	Gen	100	75	County	Yes¹	R N	1921
Douglas 1 758—Converse							
Douglas Hospital	Gen	17	11	Indiv	No	R N	1907
Evanston 3 507—Uinta							
Wyoming State Hospital	N&M	400	395	State	No	M D	1888
Ft Russell 22—Laramie							
Station Hospital	Gen	185	20	Army	No	M D	1867
Ft Washakie 62—Fremont							
Shoshone Indian Hospital³	Gen	35	10	Indian	No	M D	1919
Gebo 774—Hot Springs							
Gebo Hospital	Gen	22	12	Indiv	Yes	R N	1917
Grass Creek 482—Hot Springs							
Ohio Grass Creek Hospital	Indus	10	5	Indus	Yes	M D	1925
Greybull 2 047—Bighorn							
St Luke's Hospital	Gen	8	4	Indiv	No	M D	
Jackson 395—Lincoln							
St John's Hospital	Gen	9	6	Church	No	R N	1916
Kemerer 1 903—Lincoln							
Lincoln County Miners Hospital	Gen	50	24	Indep	Yes¹	R N	1907
Lander 1 739—Fremont							
Bishop Randall Hospital	Gen	20	6	Church	No	R N	1912
Wyoming State Training School	N&M	170	165	State	No	Lay	1912
Laramie 9 029—Albany							
Albany County Hospital	Gen	12	6	County	No	M D	1923
Lovell 1 575—Bighorn							
Lovell Hospital	Gen	6	3	Indiv	No	M D	1921
Midwest 2 122—Natrona							
Midwest Hospital	Indus	35	30	Indus	No	M D	1922
Powell 1 065—Park							
Whitlock Hospital	Gen	16	7	Indiv	No	M D	1917
Rock Springs 6 875—Sweetwater							
Wyoming General Hospital	Gen	92	52	State	Yes¹	R N	1892
Sheridan 8 436—Sheridan							
Sheridan County Memorial Hospital	Gen	60	52	County	Yes¹	R N	1905
United States Veterans Hospital No 86 ▲	N&M	431	421	VetBur	No	M D	1922
Shoshoni 250—Fremont							
Dr Jewell's Hospital³	Gen	11	3	Indiv	No	M D	1908
Thermopolis 1 606—Hot Springs							
Carter General Hospital	Gen	10	6	Indiv	No	R N	1916
Hopewell Hospital	Gen	40	10	Indep	No	R N	1917
McGannon Sanitarium³	Gen	20	12	Indiv	No	Lay	1901
Wheatland 1 281—Platte							
Home Medical and Surgical Infirmary	Gen	5	2	Indiv	No	M D	1921
Wheatland General Hosp ▲	Gen	62	41	Indep	Yes¹	R N	1908
Worland 1 235—Washakie							
Dr Gray's Hospital	Gen	11	3	Indiv	No	M D	1912

Total registered hospitals in Wyoming 33 capacity 2,056 a
census 1 449 Hospitals not admitted to the register 4 capacit

Key to symbols and abbreviations will be found at top of page 923

CLINICAL LABORATORY SERVICE IN THE UNITED STATES

The fact has been lamented that during recent years laboratory work has fallen largely into the hands of lay technicians and become the toy of persons who have a purely commercial point of view and little training for the work.

Some of the organizations of pathologists, bacteriologists and chemists working alone undertook to investigate and to standardize the practice of clinical pathology, but the efforts of these organizations working singlehanded were of little or no avail except to emphasize the enormousness of the task and the necessity for cooperation.

In 1923 three committees representing the American Chemical Society, the American Association of Pathologists and Bacteriologists and the Council on Medical Education and Hospitals were appointed. The joint committee voted that the work be conducted by the Council on Medical Education and Hospitals on principles established by the joint committee, known as the "Essentials of an Approved Clinical Laboratory," which are reproduced in this issue of The Journal, beginning on page 981 and which were approved by officials of the American Society of Clinical Pathologists and in 1926 by the House of Delegates of the American Medical Association.

To assist in giving fair consideration to each application for approval, a strong committee of 120 laboratory experts was formed covering every state or section of the country.

REPORT OF PROGRESS

At present, of the 354 laboratories which have reported, 160, after careful investigation, have been placed on the approved list, and other applications for approval are constantly being received.

The spirit of this movement is constructive. Any one who knows the condition of the laboratory field at the time this survey was begun would not expect telling or spectacular results to be shown by this time; nevertheless, there are ample reasons for believing that actual improvements are being made. 1. A number of laboratories formerly run by technicians and only nominally under "medical" directors have come under the ownership and actual control of clinical pathologists of high professional standing and ripe experience. 2. A number of laboratories under the control of technicians have gone out of business. 3. There is an increased demand for pathologists to man the clinical laboratories of the country. 4. The feeling of unsteadiness indicated in the discussions of a few years ago has subsided to a considerable degree, and there is a more hopeful attitude on the part of the clinical pathologists themselves.

RECENT RESURVEY OF LABORATORIES

During the months of January and February, 1928, a complete resurvey of all clinical laboratories was made. A total of 354 laboratories responded, including all but two of the 145 laboratories that were on the approved list one year ago, and those two have been covered by visits from the Council headquarters. This means that 211 responses were received from laboratories not yet on the approved list. Enough have been added recently to bring the total approved laboratories to 160, a net gain of fifteen during the last year, and others are under consideration.

FUTURE OUTLOOK

To the extent to which physicians have already discontinued sending their work to unqualified laboratories and are patronizing approved laboratories, progress has been made. Clinical pathology as a specialty of medicine is different from other specialties in one respect—it is one that may be assumed by nonmedical individuals. In this respect the special field of the clinical pathologist is not only open to the inroads of nonmedical technicians, but has actually been entered by them.

In order to secure the best analyses for the benefit of their patients, as well as to conserve the interests of the medical profession, physicians should refuse to have their work done in laboratories conducted under the direction of nonmedical persons. For the convenient reference of physicians the complete list of accredited laboratories is printed on the following pages.

Any laboratories not yet on the list will be promptly considered for approval if they express such a desire.

ESSENTIALS OF AN APPROVED CLINICAL LABORATORY

Revised to March 1, 1928

DEFINITION

A clinical pathologic laboratory is an institution organized for the practical application of one or more of the fundamental sciences by the use of specialized apparatus, equipment and methods, for the purpose of ascertaining the presence, nature, source and progress of disease in the human body.

Only those clinical laboratories in which the space, equipment, finances, management, personnel and records are such as will insure honest, efficient and accurate work may expect to be listed as approved.

LOCATION, HOUSING AND EQUIPMENT

The housing and light should be adequate for the proper functioning of the laboratory. The equipment should be sufficient to permit all essential technical procedures to be properly carried out.

SCOPE

A general clinical laboratory should be prepared to render the following services:

(*a*) Hematologic. Blood counts, blood groupings and coagulation tests, and tests for blood parasites in general.

(*b*) Biochemical. Qualitative and quantitative analyses of urine, blood, gastric contents, body fluids, feces, intestinal contents and cerebrospinal fluids; renal and hepatic function tests and basal metabolism.

(*c*) Bacteriologic. Bacteriologic diagnoses; preparation of vaccines and blood and body fluid cultures.

(*d*) Serologic. Serologic diagnoses; agglutination, complement fixation, or precipitin and lysis tests.

(*e*) Pathologic. Preparation of paraffin, celloidin or frozen sections, microscopic and gross pathologic specimens and necropsies.

(*f*) Parasitologic. Protozoal and zoological diagnoses.

PERSONNEL

(*a*) *The Director*.—The Director of an approved clinical laboratory should be a graduate of an acceptable college or university of recognized standing, indicating proper educational attainments. He shall have specialized in clinical pathology, bacteriology, pathology, chemistry, or other allied subjects for at least three years. He must be a man of good standing in his profession.

The Director shall be on full time, or have definite hours of attendance, devoting the major part of his time to the supervision of the laboratory work

The Director may make diagnoses only when he is a licensed graduate of medicine, has specialized in clinical pathology for at least three years, is reasonably familiar with the manifestation of disease in the patient, and knows laboratory work sufficiently well to direct and supervise reports

Where the Director is not a licensed physician the laboratory shall issue no reports containing diagnoses and prognoses, unless such diagnoses and prognoses are made and signed by a staff physician having the qualifications specified above for a medical director

(*b*) *Assistants*—The Director may have a corps of qualified assistants and technicians, responsible to him, and for whom he is responsible to carry out promptly, intelligently, and accurately the several kinds of service the laboratory offers All their reports, not only of tissues but also of all bacteriologic, hematologic, biochemical, serologic and pathologic data, should be made to the director

REPORTS

An approved clinical laboratory should make its reports through the director If the director is not a physician, any report making diagnoses or prognoses shall carry also signature of the staff physician, and such reports shall be made solely to the physician in charge of the patient All blanks for reports and other documents should have the name of the director printed on them and if of a diagnostic or prognostic character, the name of the staff physician also

RECORDS

Full records of all examinations made by the laboratory, suitably indexed and filed, are essential Every specimen analyzed in the laboratory should be given a serial number, which should follow that specimen in the records and reports When the laboratory report concerns a hospital patient, an exact transcript of the laboratory record should be appended to the hospital case record Each specimen submitted to the laboratory should have appended pertinent clinical data

LIBRARY

The laboratory should be provided with, or have convenient access to, a library including current scientific books and journals on all the various subjects required in its work

FEES

There should be no dividing of fees or rebating between the laboratory or its director and any physician, corporate body or group

PUBLICITY

Publicity of an approved clinical laboratory should be in professional good taste and be limited to statements of fact, as the name, address and telephone number of the laboratory, names and titles of the director and other active responsible personnel, fields of work covered, office hours, directions for sending specimens, etc, and should not contain misleading statements or claims of unusual superiority It should not advocate medical fads nor lay undue stress on the importance of laboratory findings

Only the names of those rendering regular service to the laboratory should appear on letterheads, or any other form of publicity as being connected with the laboratory

Advertising matter should be directed only to physicians either through bulletins or through recognized technical journals, and never to the nonprofessional public, as, for example, by announcements in popular journals and periodicals, circulars pamphlets, telephone lists or other means

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APPROVED CLINICAL LABORATORIES

All the laboratories on the approved list are supervised by persons having the M D degree, and conform to the other requirements of the Council on Medical Education and Hospitals The 'Essentials of an Approved Clinical Laboratory" precedes this list

Tucson ARKANSAS

Tucson Clinical Laboratory 20 E Ochoa St Frank G Schaible Director

Fort Smith ARIZONA

Holt Clinic Laboratory 1018½ Garrison Ave John H Harvey Director

Hot Springs National Park

Laboratory of Clinical Medicine Dugan Stuart Bldg Dee C Lee Director

Little Rock

The Central Clinical and Pathological Laboratory Hall Bldg S F Hoge Director

Drs Rhinehart & Rhinehart s Laboratory Donaghey Bldg Darmon A Rhinehart and Barton A Rhinehart Directors

Pine Bluff

Pittman Laboratories National Bldg W G Pittman Director

Hollywood CALIFORNIA

Hollywood Clinical Laboratory 1680 N Vine St E Henry Ruediger Director

Long Beach

Dr B C Shackford Clinical Laboratory Security Bldg

Los Angeles

Clinical Laboratory of Drs W V Brem A H Zeiler and R W Hammack Pacific Mutual Bldg

Clinical Laboratory of Drs Evans Butka and Pratt 1052 W 6th St H E Butka Director

Laboratory of Dr Mona E Bettin 427 W 5th St

Moore White Clinic Laboratory 511 S Bonnie Brae R B Hill Director

Terry Clinical Laboratory 607 S Hill St. M C Terry Director

Oakland

The Western Laboratories 2401 Broadway Gertrude Moore Director

Pasadena

Pasadena Clinical Laboratory 63 N Madison Ave Gustav F Ruediger Director

San Diego

Clinical Laboratory 520 E St Dawson J Pickard Director

San Francisco

Diagnostic Laboratories 490 Post St Ernst A Victors Director

Oliver Knapp Clinical Laboratory 490 Post St Harry R Oliver Director

O Reilly Wheeler Clinical Laboratory 870 Market St B C N O Reilly Director

Stockton

Holliger & Sheldon Laboratories 242 N Sutter St C D Holliger and F B Sheldon Directors

Woodland

Woodland Clinic Laboratory D Schuyler Pulford Director

COLORADO

Colorado Springs

Clinical Laboratory Burns Bldg Minnie F Staines Director

Denver

Clinical Laboratory of Dr Ward Burdick Republic Bldg

Clinical Laboratory of Dr Philip Hillkowitz Metropolitan Bldg

Clinical Laboratory of Dr W C Mitchell Metropolitan Bldg

Clinical Laboratory of Dr Wm W Williams 209 16th St

Pueblo

Laboratory of Dr C W Maynard 702 N Main St

Hartford CONNECTICUT

Hartford Hospital (Hall Wilson Laboratory) 20 S Hudson St Wilmar M Allen Director

Middletown

Middlesex Hospital Laboratory 28 Crescent St Jessie W Fisher Director

DISTRICT OF COLUMBIA

Washington

Clinical Laboratory 1801 Eye St N W H H Leffler Director

National Vaccine and Antitoxin Institute 1515 U St N W Philip Jaisohn Director

Jacksonville FLORIDA

Diagnostic Laboratories Professional Bldg W W Kirk Director

Miami

Drs Youmans Laboratories Professional Bldg Ira C Youmans Director

West Palm Beach

Clinical Laboratory State Laboratory Bldg Vernon M Jared Director

Atlanta GEORGIA

Laboratories of Drs Bunce Landham and Klugh 139 Forrest Ave N E Geo I Klugh Director

Chicago ILLINOIS

American Laboratories 25 E Washington St Benjamin Markowitz Director

Chicago Laboratory Clinical and Analytical 25 E Washington St Ralph W Webster Director

Gas Building Laboratory Inc 122 S Michigan Ave H K Nicoll Director

Lincoln Gardner Laboratory 30 N Michigan Ave Mary C Lincoln and Stella M Gardner Directors

Medical Research Laboratories Inc 25 E Washington St C Churchill Croy Director

The Murphy Laboratories 4753 Broadway I J Murphy Director

National Pathological Laboratories 5 S Wabash Ave Josiah J Moore Director

Quincy

Clinical Laboratory Illinois State Bank Bldg Frank Cohen Director

Rockford

Rockford Hospital Laboratory Corn Chestnut and Court Sts Henrietta A Calhoun Director

Rockford Laboratories for Medical Research Brown Bldg John R Porter Director

Fort Wayne INDIANA

Fort Wayne Medical Laboratory Inc 317 W Berry St Bonnello W Rhamy Director

Indianapolis

The Laboratory for Clinical Diagnosis Hume Mansur Bldg Harry K Langdon Director

La Fayette

Lafayette Clinical Laboratory Lafayette Life Bldg Frank P Hunter Director

South Bend
South Bend Medical Laboratory 604 N Main St Alfred S Giordano Director

KANSAS

Topeka
The Lattimore Laboratories Mills Bldg J L Lattimore Director

KENTUCKY

Lexington
Clinical Laboratory of Lexington Clinic 190 N Upper St Elmer S Maxwell Director

Louisville
Martin McNeill Laboratories Brown Bldg Wm C Martin and Clyde McNeill Directors

LOUISIANA

Lake Charles
Clinical Laboratory of Dr Louis A Hebert Weber Bldg

Shreveport
Laboratory of Drs F G Ellis and W P Butler 941 Margaret Pl

MAINE

Portland
Dr Mortimer Warren s Laboratory 131 State St

MARYLAND

Baltimore
Clinical Laboratory of Dr Henry T Collenberg 904 N Charles St
Clinical Laboratory of Dr Howard J Maldeis 605 Park Ave
Paul W Clough and Mildred C Clough Laboratory 24 E Eager St Paul W Clough Director

MASSACHUSETTS

Boston
Clinical Laboratory 205 Beacon St Francis L Burnett Director
Physicians Clinical Laboratory 30 Huntington Ave J Edwin Oslin Director

Brookline
Sias Laboratories 227 Summit Ave Chas L Overlander and Francis H Slack Directors

MICHIGAN

Detroit
Laboratory of Dr Frank W Stafford 1612 Eton Tower
National Pathological Laboratory Inc David Whitney Bldg Fred J Eakins Director
Owen Clinical Laboratory Stroh Bldg R G Owen Director

Grand Rapids
Laboratory of Dr James S Brotherhood Metz Bldg

Saginaw
Central Laboratory of Saginaw 302 S Jefferson St Oliver W Lohr Director

MINNESOTA

Minneapolis
Clinical Laboratory of the Minneapolis Clinical Association Donaldson Bldg Floyd Grave Director

MISSISSIPPI

Vicksburg
The Laboratories Vicksburg Sanitarium and Crawford Street Hospital 920 Crawford St Leon S Lippincott Director

MISSOURI

Kansas City
Duncan Laboratories Argyle Bldg Ralph E Duncan Director
Laboratory of Clinical Pathology Argyle Bldg Frank J Hall Director

St Louis
Clinical Laboratory of Dr George Ives 3720 Washington St
Gradwohl Laboratories 3514 Lucas Ave R B H Gradwohl Director
Dr C L Klenk s Pathological and Bacteriological Laboratory Metropolitan Bldg
Laboratory of Dr Rudolph Buhman 537 N Grand Blvd
Laboratory of Dr D L Harris Metropolitan Bldg
National Pathological Laboratory 607 N Grand Blvd Ralph L Thompson Director

Springfield
Dr Murray C Stone s Laboratory Woodruff Bldg

MONTANA

Great Falls
The Walker Laboratories Stanton Bank Bldg Thos F Walker Director

NEBRASKA

Omaha
Laboratories of Clinical Pathology Medical Arts Bldg M G Wohl F W Niehaus and A S Rubnitz Directors
The Nebraska Laboratory Medical Arts Bldg E T Manning Director

NEVADA

Reno
Clinical Laboratory of Dr Arthur L Grover St Mary s Hospital

NEW JERSEY

Asbury Park
Clinical Laboratory Fitkin Bldg C A Pons Director

Atlantic City
Laboratories Atlantic City Hospital S Ohio Ave Robt A Kilduffe Director (Does no basal metabolism nor electrocardiographic work)

Orange
Cline Laboratory 264 Central Ave B F Cline Director (No blood chemistry Wassermanns sent out)

NEW MEXICO

Albuquerque
Van Atta Laboratories First National Bank Bldg J R Van Atta Director

NEW YORK

Albany
Bender Hygienic Laboratory 138 S Lake Ave

Binghamton
Kilmer Pathological Laboratory 21 Park Ave Geo H Fox Director

Brooklyn
Biophil Laboratory for Diagnosis and Research 32 Court St Florence A Black Director
Brooklyn Diagnostic Institute 867 St Marks Ave Jacob Gutman Director
Dr Horace Greeley s Laboratory 140 Clinton St
Private Laboratory of Dr William Moltrier Jr 1219 Dean St

Jamaica
Campbell Laboratory 89 18, 139th St N Campbell Director
Clinical Laboratory of Dr Edward J Buxbaum 8711 150th St

New Rochelle
von Wedel Laboratories 421 Huguenot St H O von Wedel Sc D Director, P T McIlroy M D Pathologist

New York
Analytical and Bacteriological Laboratory Bendiner and Schlesinger 47 and 49 Third Ave H T Brooks Director
Clinical Laboratory of Dr Frederic E Sondern 20 W 55th St
Clinical Pathology Laboratory 150 E 73d St Phebe L DuBois Director
Laboratories of New York Post Graduate Medical School and Hospital 303 E 20th St W J MacNeal Director
Laboratory of Dr Lindsley F Cocheu 39 W 67th St
Laboratory of Dr Andrew A Eggston 653 Park Ave
Laboratory of Dr Wm McK Higgins 666 Madison Ave
Laboratory of Dr Oliver S Hillman 114 E 54th St
Medical Laboratory 126 E 64th St Cyrus W Field Director
National Pathological Laboratory of New York Inc 18 E 41st St Archibald McNeil Director
Pathological Laboratory of Dr Julius Pincus 250 W 75th St
Serological Laboratory of Dr David J Kaliski 70 E 83d St (Work limited to serology)

Rochester
Medical Laboratory of Dr George W O Grady 35 Chestnut St

Troy
Laboratory of Dr H W Cary 72 2d St

Utica
George Alder Blumer Research Laboratory Court St Clarence L Russell Director

OHIO

Cincinnati
Cincinnati Biological Laboratory, 19 W 7th St Albert Faller Director
Langdon Meyer Laboratories 519 Main St Fletcher Langdon Director

Cleveland
The Cleveland Laboratory Erie Bldg R G Schnee Director
The Medical Chemical Laboratory Rose Bldg John G Spenzer Director

Columbus
Laboratory of Dr E R Shilling 345 E State St

Dayton
Clinical and Pathological Laboratory Fidelity Medical Bldg Foy C Payne Director

Springfield
Springfield Clinical and Pathological Laboratory First National Bank Bldg Clement L Jones Director

Toledo
Clinical Laboratory of Dr A H Schade 320 Michigan St
Clinical Laboratory of Dr Theodore Zbinden Colton Bldg
Toledo Clinical Laboratories 1611 22d St. R. C Longfellow Director

OKLAHOMA

Bartlesville
Clinical Laboratory of Dr Elizabeth Chamberlin First National Bank Bldg

Oklahoma City
Medical Arts Laboratory Inc Medical Arts Bldg John E Heatley Director
Wesley Hospital Laboratory 300 W 12th St Wm H Bailey Director

Okmulgee
Laboratories of Thomas A Hargraves, Atlas Life Bldg

Tulsa
Terrell s Laboratories, Medical Arts Bldg S. C Venable Director

OREGON

Portland
H H Foskett M D Clinical Pathology, Medical Arts Bldg
Medical Laboratory 6th and Alder Sts Harriet J Lawrence Director

PENNSYLVANIA

Philadelphia
Laboratory of Clinical Medicine and Pathology 1831 33 Chestnut St Damaso de Rivas Director
Laboratory of Dr Gordon J Saxon 3320 Filbert St
Laboratory of Pathology and Bacteriology 1524 Chestnut St Eugene J Asnis Director

Pittsburgh
Private Laboratory of Dr Moses H Baker, 121 University Pl

TENNESSEE

Chattanooga
Clinical Laboratory of Dr Tolbert C Crowell Volunteer Bldg

Knoxville
Clinical Laboratory of Dr R V DePue 503 W Church St

Memphis
Laboratory of Dr James S Fleming Exchange Bldg
X Ray and Pathological Laboratories of Dr L V Schmittou Exchange Bldg

Nashville
Laboratory of Dr Herman Spitz Doctors Bldg
Laboratory Service of Dr R L Jones Doctors Bldg

TEXAS

Austin
Clinical Laboratory Scarbrough Bldg Geo M Graham Director

Beaumont
Dr W F Thomson s Laboratory of Clinical Pathology San Jacinto Bldg

Corsicana
X-Ray and Pathological Laboratory of Dr R C Curtis State National Bank Bldg

Dallas
Clinical Laboratory Medical Arts Bldg J H Black Director
Laboratory of Clinical Pathology Medical Arts Bldg Marvin D Bell Director
Terrell Carter Laboratory Medical Arts Bldg Chas F Carter Director

Denison
Denison Clinical Laboratory Security Bldg Paul Pierce Director

El Paso
Turner s Clinical Laboratory First Bank Bldg Geo Turner Director
Waite s Laboratory Roberts Banner Bldg Willis W Waite Director

Fort Worth
Terrell s Laboratories Medical Arts Bldg T C Terrell Director

Houston
Clinical Laboratory Medical Arts Bldg Martha A Wood Director
Edward F Cooke Laboratory of Clinical Pathology Keystone Bldg

San Antonio
The Hamilton-Stout Laboratories Medical Arts Bldg B F Stout Director

Temple
Laboratory of King s Daughters Hospital 304 S 22d St. J E Robinson Director

Wichita Falls
Glover s Laboratories Hamilton Bldg M H Glover Director

UTAH

Salt Lake City
Clinical Laboratory of Dr T A Flood 10 W First South St

VIRGINIA

Richmond
McGuire Clinic 1000 W Grace St S W Budd Director

WASHINGTON

Seattle
Physicians Clinical Laboratories Cobb Bldg V Cefalu Director

Spokane
Hollister Stier Laboratories Old National Bank Bldg Robt. F E Stier Director
Wassermann and Diagnostic Laboratories of Drs M M Patton and F R Patton Paulsen Bldg

WEST VIRGINIA

Bluefield
St Luke s Hospital Pathological Laboratory 1710 Bland St Margaret S Grant Director

WISCONSIN

Milwaukee
Hopkinson Laboratory 211 Wisconsin Ave Edward L Tharinger Director
Seelman Laboratories Inc 79 E Wisconsin Ave J J Seelman Director

HAWAII

Honolulu
The Clinic, 401 S Beretania St Eric A Fennel Director

THE JOURNAL OF THE
AMERICAN MEDICAL ASSOCIATION

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SATURDAY, MARCH 24, 1928

HOSPITAL SERVICE IN THE UNITED STATES

This week THE JOURNAL presents the seventh annual compilation of statistics regarding hospital service in the United States The information presented is based on the most complete return from all hospitals that has ever been secured in the hospital surveys The figures have been carefully checked and are believed to be accurate

Beginning with the first edition of the American Medical Directory in 1906, and in each of the nine succeeding editions, a list of hospitals has been published It has always been a censored and selected list The process of obtaining information about hospitals has been continuous, so that the hospital files constitute at once a history of each hospital and a perpetual inventory of hospital service

THE HOSPITAL REGISTER

This list of hospitals published regularly in the American Medical Directory has been of increasing value to physicians and has been widely used not only by the medical profession but also by public health and other government agencies and the public in general So much reliable hospital information has been accumulated since 1906 that it has been thought desirable to make it available for greater use This year, therefore, is published the first edition of the American Medical Association's Hospital Register, which gives the name of each institution, its location, capacity, average number of patients, type of ownership or control, the population of the city or town, and other valuable information The facts regarding individual hospitals were supplied by the hospitals themselves on reports furnished usually by the superintendent The existence of the hospital and its general standing have been verified by the large army of county secretaries, and information obtained from other reliable sources, including correspondence and investigations Since the value of the list depends largely on its being kept down to date, new editions of the Hospital Register will appear as frequently as they are deemed necessary Lists will be published occasionally also of hospitals whose status has changed, so that later improvements in hospitals will be given due recognition

PHYSICIANS ON HOSPITAL STAFFS

The importance of hospitals to physicians is indicated by the fact that 107,734 names of physicians appeared on the staff lists that were supplied by 5,100 hospitals Some hospitals do not have staffs, 1,707 did not send staff lists, and the names of some physicians appear on more than one staff list By making due allowance for these facts, a conservative estimate is that more than 85,000 physicians are practicing in hospitals

How these 85,000 or more physicians connected with hospitals would classify as to specialties is not known The American Medical Directory shows that physicians are enrolled in the various specialties as follows surgery, 11,391, eye, ear, nose and throat 4 700, pediatrics, 3,052, internal medicine, 2,933, obstetrics, 2,378 urology, 1,971, obstetrics and gynecology, 1,817, roentgenology, 1,504, ear, nose and throat, 1 477, ophthalmology 1,296, gynecology, 1,282, neurology and psychiatry, 1,121, and twelve other specialties, making a total of 40,339 Just how many of these specialists do not use hospitals is not known but, if all are using hospitals, there are also at least 44,661 other physicians who are using the hospitals

The hospitals report also a total of 5 114 resident physicians, 4,443 interns and 2,461 physicians acting as superintendents In addition to the intimate interrelationship between physicians and hospitals as shown by their physician personnel is the fact that hospitals are both the training ground and the workshop of physicians The physician's contact with a hospital begins in his medical college course, where a considerable portion of his third and fourth years is spent in the hospital The figures indicate also that at least 90 per cent of all medical graduates spend one or more years in hospitals as interns Not only is the approach to medicine through the hospital, but also the accepted mode of proceeding into specialization Hospitals in an increasing ratio are coming to be used for the practice of specialties Reports received year after year indicate that hospitals in increasing numbers are separating their services according to the specialties This may not apply to all small hospitals, although it is desirable where practical

TYPES OF HOSPITAL SERVICE AND CONTROL

The hospital statistics are given also according to the types of service rendered and according to the various sources of control, so that comparisons can be made with similar statistics presented heretofore or which may be published hereafter It is interesting to note in tables 1 and 2 the variations in the number and size of hospitals according to these classifications

It is believed that the information published this week will bring a better understanding of the entire hospital situation—an extremely important matter since hospitals are now assuming so large a place both in medical education and in the practice of medicine

POSTMORTEM EXAMINATIONS

In the symposium on postmortem examinations at the recent conference on medical education,[1] several practical observations were made In Minneapolis there were nearly 1,400 necropsies during 1927—about 19 per cent of all deaths occurring during the year in that city, which has about half a million people Of the 1,400 necropsies only about 200 were coroners' cases, the others being made by personal consent of the relatives of the deceased This record is apparently unequaled by any other city of considerable size in America It may be taken either as remarkable evidence of the intelligence of the citizens in that city or of an unusually efficient medical profession

The obtaining of consent for the holding of the necropsies devolved on a relatively small number of practicing physicians Had a larger number of physicians been equally interested, the showing might have been even better Incidentally, little or no interference from undertakers developed, probably because of the opportunity provided for them to obtain a training in anatomy and gross pathology at the University of Minnesota, and because they have been shown that good embalming can be done after necropsy has been properly made

Another report revealed what may be done in securing consent for necropsies in connection with a physician's private practice A general practitioner in a small city was able to secure consent for and performed necropsies on the bodies of thirty of the thirty-three of his patients who died during 1927

An interesting account was given of an effort to secure a large collection of pathologic material for the study of diseases of the ear in relation to deafness A research committee of the Association for the Hard of Hearing is making an earnest effort to have persons suffering from various degrees of deafness indicate their desire that pathologic studies be made of their ear mechanism after death Because of our present ignorance of the pathology of deafness, few diseases make a wider or more earnest appeal for careful postmortem study

Attention was forcibly called to the importance of proper, or even to say, reverent, deportment in the necropsy room as a means of removing objections to the making of postmortem examinations The routine should be fully as respectful as that followed in the surgical operating room

The American public mind should be brought to the same point of view as that of the continental European Necropsies should be the accepted procedure Public opinion toward this end might be developed in states having a homogeneous population of intelligent citizens If physicians and hospital authorities take a deeper interest in necropsies they can make the importance of such examinations more clear to the friends of the dead, authority to perform necropsies will then be granted more frequently and more readily In the rapid development of hospitals in the United States, no other procedure would increase the hospital's usefulness and result in greater benefit to patients The medical profession should not lag behind the intelligent public in the proper conception of the necessity for necropsies in order "that those dead shall not have died in vain "

COUGH

Although cough is one of the commonest of symptoms there is no unanimity of opinion as to its management It can be tolerated or subdued What is the desirable procedure? In contemplating the answer to this practical question, one inevitably calls to mind the mechanisms that are involved Although cough may be voluntary, it usually is an expiratory effort caused reflexly by some irritation The muscles of the lower part of the chest are most engaged in the act of coughing, hence in severe, prolonged or frequent coughing muscle tire occurs in the lower part of the chest, both anteriorly and posteriorly The abdominal muscles all take part in this expiratory effort, and the erector spinae muscles, the serratus, and the quadratus lumborum are all utilized in a strong expiratory cough The muscle contractions compress in all directions the lower part of the chest, and the air in the bronchial tubes is forced upward, and, if there is no obstruction, is expelled through the glottis If there is obstruction or even partial obstruction, the upper portion of the lungs, especially the apexes, become dilated, and temporarily or, in severe cases permanently emphysematous

If the expulsion of an irritant or the production of a free passage of air in and out of the tracheobronchial tree were the sole consideration at issue, coughing would be regarded for the most part as a beneficent reaction Lord[1] has recently pointed out however, that under certain circumstances cough may be a source of considerable danger With a weak myocardium, cough caused by an acute respiratory infection or passive congestion may overtax an already burdened heart and become an important contributing cause of cardiac failure With hemoptysis caused by tuberculosis, cough may dislodge the thrombus in a bleeding vessel and lead to renewed hemorrhage In the presence of pulmonary tuberculosis, the exertion and heightened air pressure within the thorax caused by cough may activate or keep active the tuberculous process The expulsion by cough of infected material from one place to another in the bronchial tree may spread infection into previously uninvolved regions

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[1] Annual Conference of the Council on Medical Education and Hospitals Chicago February 6 8

[1] Lord F T in discussion on Archibald Edward, and Brown, A L Cough, Arch Surg **16** 322 (Jan) 1928

A somewhat novel arraignment of coughing has been presented by Archibald and Brown They have observed roentgenographically the distribution of iodized oil, introduced into the tracheobronchial tree, when cough reflexes are subsequently initiated In their experiments it became clear that coughing may actually drive material similar in consistency to such oil deeper into the pulmonary tree To understand this one must recall that the act of coughing, although itself primarily a forced expiratory effort, is immediately preceded or followed by a markedly increased inspiration This becomes most evident during a so-called spasm of coughing, when one observes a rapid succession of deep inspiratory and increased expiratory efforts A single cough does not always clear the pulmonary tree of the irritating substance Therefore, Archibald and Brown point out, it may be assumed that in many instances this irritating substance is acted on by the increased inspiratory rush of air which follows cough and which may possibly carry it, or a portion of it on into the finer bronchioles or even into the alveoli In case the entire mass has been transported by the inrush of air, either in toto or in a subdivided state, the situation is one in which a substance which originally was in a sensitive area of the pulmonary tree is now in a region where its presence does not produce a stimulation to cough Even if most of the substance is subsequently expelled by cough initiated elsewhere, it is still clear that a chain of events takes place whereby particles may be transported, by one phase of the act of coughing, downward into the finer ramifications of the pulmonary tree, where they may come to rest If, now, the material is of an infective nature, a pathologic process may be initiated This tendency is heightened by the circumstance that whereas irritation of the larger bronchial passages leads promptly to cough production, the smaller bronchioles do not respond so readily to the presence of something foreign Even the expiratory effort may force particles distal to a bronchiolar block into regions previously uncontaminated

It is sometimes argued that in various operative procedures anesthesia should be so regulated as to preserve the cough reflex Many surgeons have arrived at the conclusion that under such conditions the alveolar spaces of the healthy lung may become invaded by part of the material—usually mucus and pus—that it is desired to expel Archibald and Brown believe that such complications may be obviated by the use of a general anesthetic and by sufficient morphine both before operation and for at least twenty-four hours after operation to abolish the cough reflex, and the possible effect of gravity can be obviated by operating with the head and chest of the patient inclined downward Postural drainage, in this sense, at the time of operation will aid in the immediate elimination of a majority of the fluid pus escaping from cavities

The behavior of different substances in the lungs varies From the new studies it appears that cough may tend to drive fluid substances similar to iodized oil deeper into the pulmonary tree, and that it is incapable of like action on a heavier substance, such as thick, tenacious sputum On the whole, however, clinicians will probably agree with Lord that cough, in spite of its dangers, is usually to be regarded as of advantage to the patient, and should ordinarily be treated only by those methods which attempt to improve or eliminate the cause It would certainly seem safer, he concludes, not to attempt to subdue cough and expectoration by drugs when there is such foreign material within the air passages as blood or pus But when the patient is harassed and fatigued, and his sleep is disturbed by unproductive cough, it may then be desirable to attempt its control by drugs, even though some risk may be taken by so doing In any event the management of cough sometimes demands a clear insight into a variety of factors that attend its genesis

Current Comment

ABSORPTION OF INSULIN FROM THE ALIMENTARY TRACT

From a practical standpoint, the necessity of supplying insulin by subcutaneous injection in the dietotherapy of diabetes is obviously undesirable Even under the most favorable conditions, hypodermic medication involves procedures that represent some annoyance to the patient and involve potentialities of undesirable reactions These are correspondingly augmented when the injections must be repeated from day to day with *unremitting* care and appropriate skill In the case of emergencies, of course, the prompt efficacy of subcutaneous or intravenous administration of remedial agents overshadows all the drawbacks that have been referred to The situation becomes different, however, when parenteral treatment becomes a necessity of daily routine Hence the hope has never vanished that it may become possible to institute pancreatic replacement therapy and supply the hormone of the islands of Langerhans, when necessary, by the oral route Heretofore the susceptibility of insulin preparations to deterioration and destruction through the tryptic enzymes *and the* secretion in which they occur has thwarted the efforts at successful administration of the hormone by mouth, but there have been occasional indications that insulin can be absorbed from the alimentary tract[1] Murlin and Hawley[2] have pointed out in this connection that the concentration of insulin reaching the general circulation, however, has always been small compared with that which follows subcutaneous administration Notwithstanding that huge doses have been given there has never been any evidence of hypoglycemia To some extent this has been compensated for by a more prolonged effect, lasting indeed in some instances into the second day after administration In recent experiments at Rochester, N Y, Murlin and Hawley have taken advantage of the antitryptic effect of blood serum to protect insulin given by oral paths from pancreatic digestive destruction Their observations on a series of depancreatized dogs prove beyond a doubt that insulin protected by blood serum from the proteolytic destruction of the digestive enzymes can be absorbed in significant amounts from the alimentary tract In some instances the respiratory quotient was raised quite as high as following subcutaneous injection The effect on blood sugar is not so sudden or so great as when insulin is given subcutaneously The liver seems to protect the body against the shocklike effects of a sudden access of insulin to the general circulation Hypoglycemic shock has never been seen following alimentary administration of insulin even in huge doses This is not the story of a completely dependable method of oral therapy, the results certainly do not establish the usefulness of the host of proprietary insulin substitutes proposed for oral use

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[1] Murlin J R Clough H D Gibbs C B F and Stokes A M J Biol Chem **56** 253 (May) 1923 Murlin Sutter Allen and Piper Endocrinology **8** 331 (May) 1924 Gaebler, O H and Murlin J R J Biol Chem **66** 731 (Dec) 1925

[2] Murlin J R and Hawley Estelle E Absorption of Insulin from the Alimentary Tract of Depancreatized Dog When Protected by Blood Serum Am J Physiol **83** 147 (Dec) 1927

TULAREMIA AMONG MEADOW MICE

Tularemia, the acute infectious disease caused by *Bacterium tularense* discovered by McCoy and Chapin in 1912, has only a brief history as a disease affecting mankind Since Francis of the U S Public Health Service first isolated the micro-organism from human patients in 1920 and assigned the name to the disorder resulting from their infection, tularemia has rapidly acquired an importance beyond that of a mere curiosity or rarity in clinical medicine Nearly every month brings fresh reports of well established cases, so that the malady, originally discovered in the Far West, is known to occur throughout this country Up to the present it has been observed only in the United States As final distinction from typhoid, anthrax and septic infection, the diseases most likely to be confused with tularemia, can best be made by the isolation of the infecting micro-organism or by specific agglutination tests, it is likely that with increasing attention to the possibility of its occurrence many more cases will be brought to light The patients have usually contracted the disease by handling rabbits that are primarily infected by *Bacterium tularense* Other rodents are known to carry the disease Flies and ticks may apparently become vectors A new source of menace has just been reported for the first time by Senior Surgeon Perry[1] of the U S Public Health Service in the isolation of *Bacterium tularense* from naturally infected wild mice in California The rodents examined belonged to the species *Microtus californicus-aestuarinus* Meadow mice harbor mites, and since the mice migrate for food and live together in nests, transmission of tularemia among them by mites is probable The report is the record of another significant triumph of the scientists of the U S Public Health Service The demonstration of tularemia in the meadow mice submitted was effected by careful observance of laboratory procedure On dissection they did not show gross morbid changes and might have been discarded by a less thoroughly trained worker than the technician in the laboratory, who was familiar with both tularemia and mouse septicemia, including both the pathology and the bacteriology of these diseases In view of the indifferent consideration all too often given to such service, it is refreshing to find the government surgeon in this instance according special credit in his publication to the devoted laboratory helper who assisted in an important discovery

THE ADMINISTRATION OF ACIDS AND ALKALIS TO INFANTS

Through the normal efficacy of the equilibrium adjustment of acids and bases in the organism, the reactions to which the tissues are subjected deviate little during health The varying contributions from the intake and the processes of metabolism necessitate regulatory actions to preserve this perfect "balance" They are carried out in part by the excretory organs which tend to remove the excesses of one sort or another So successful is this regulation as a rule that we rarely stop to consider whether it may be attended with untoward manifestations In the current tendency of acidifying milk in order to overcome the marked buffer action of cow's milk and thus promote the efficacy of the gastric juice in infants, various products have been used tenth-normal hydrochloric acid, lactic acid, lemon juice and bacterial cultures With these additions, good results have been obtained a steady gain in weight and an improvement in digestive disturbances It is obvious, however, that the fate of the mineral acid after absorption from the gastro-enteric tract may differ from that of the organic acids that are susceptible of combustion in the body Excess of mineral acid must be excreted by the kidneys It is of significance, therefore, to learn from the studies of Greene[1] that hydrochloric acid in small amounts, 45 cc of a tenth-normal solution, when added to a liter of milk is followed by the appearance of casts and sometimes of red blood cells in the urine of infants In older children, about 100 cc of this dilute acid is required to bring about similar irritative manifestations When the tenth-normal hydrochloric acid is omitted from the diet, the pathologic urinary changes disappear in about forty-eight hours As might be expected, lemon juice in a concentration of 3 per cent does not lead to any evidences of irritation, and the same applies to lactic acid Alkalis do not have the same irritating effects on the urinary tract that acid does Their administration results in a slightly alkaline or slightly acid urine, which may account for the lack of irritative effects An explanation is found in the fact that the alkali may be in part eliminated through the bowel Evidence of this is furnished by the observed alkaline and soapy stools Clearly it is unwise to subject the organism to any unnecessary task in the elimination of mineral acids and fixed alkalis if it can be avoided

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[1] Perry J C Tularemia Among Meadow Mice (Microtus Californicus Aestuarinus) in California, Pub. Health Rep **43** 260 (Feb 3) 1928

[1] Greene, David Effect on the Urine of Addition of Acids and Alkalis to the Diet of Infants Am J Dis Child **35** 38 (Jan) 1928

Association News

THE MINNEAPOLIS SESSION

To Members of the House of Delegates and to Chairmen of Committees

At the Atlantic City session in 1925, the House of Delegates referred to the Board of Trustees the following resolution

Resolved That all reports of officers, councils or standing committees of this Association and all resolutions dealing with questions of policy of the Association, shall be filed with the Secretary of the Association sixty days in advance of the annual session of this House, published in the BULLETIN (or THE JOURNAL) and mailed to every delegate at least thirty days before the annual session at which such resolutions or reports are to be considered

The resolution was approved by the Board of Trustees and was carried out in 1926 and in 1927 Members of the House of Delegates intending to introduce resolutions dealing with questions of policy and chairmen of committees whose reports are to be submitted at the Minneapolis session are hereby reminded of this action of the House of Delegates and are respectfully urged to send in copies of resolutions and reports in accordance with the terms of the resolution

Hotel Accommodations at Minneapolis

Those who expect to attend the annual session of the American Medical Association to be held at Minneapolis, June 11 to 15, will do well to make hotel reservations as soon as possible in order to secure satisfactory accommodations for themselves and to make it easier for the Subcommittee on Hotels of the Local Committee of Arrangements to provide accommodations for those who may be compelled to delay making reservations The chairman of the Subcommittee on Hotels, Dr F G Benn, 1114 Donaldson Building, Minneapolis, reports that there is an abundance of room in good hotels and that satisfactory accommodations may be secured through that committee

ANNUAL CONGRESS ON MEDICAL EDUCATION, MEDICAL LICENSURE AND HOSPITALS

Twenty Fourth Annual Meeting held in Chicago Feb 6 7 and 8 1928

(Continued from page 859)

FEDERATION OF STATE MEDICAL BOARDS

FEBRUARY 8—MORNING

Revision of Medical School Regulations as Related to Licensure

DR FRED C ZAPFFE, Chicago The trend in medical education today is to recede as much as possible from the rigidity that was imposed during the period when it was highly essential to raise the instruction in medical schools to a plane comparable with that in existence in nonprofessional schools The methods in vogue were the natural outcome of an earnest attempt on the part of those engaged in the training of practitioners of medicine to produce men and women who would fit in to practice in a practical rather than a scientific manner None but these were interested in this work, therefore, no cooperation was given by educators in general With the absorption of medical schools by universities, university methods and procedures were introduced into the preparation of practitioners This, together with the rapid increase in knowledge in subjects related to medicine, converted the training in medicine into education in medicine The type of teacher underwent a rapid change—perhaps too rapid, but in the course of time this change, which at first affected only the teachers of the so-called science subjects in the medical course, also affected the teachers in the clinical subjects Today, medical educators are largely concerned in bringing about a correlation between these two groups for the purpose of perfecting medical teaching and training in practical medicine so that the best possible type of medical practitioner will be produced

Naturally, this activity has led medical educators to give serious thought to the best means to be employed to that end They are being encouraged to devise and try out plans of teaching which may run counter to prescriptions contained in legislative enactments or the rulings of individual boards Schools, therefore, find themselves forced to teach subjects that are no longer considered as essential in an undergraduate school of medicine, or to prescribe courses of definite duration (hours) when it would be more advantageous, educationally, to reduce that number Schools today cannot be questioned as to their honesty of purpose They all are anxious to produce a well taught well trained medical practitioner, regardless of the details of the time required in toto or in any given subjects They are more interested in prescribing a course with a definite objective than to give the student a long vacation Continuity of education is more essential than long rest periods Only in this manner will it be possible to arrive at a worth-while conclusion as to the best method of teaching of medical students

State boards of licensure can help more than any other group to bring order out of chaos by modifying their rules and regulations with reference to length of courses, their subject content, and other prescriptions bearing on teaching in such manner that individual colleges may have opportunity to develop a plan of instruction which is aimed to produce the sort of graduate in medicine who will not only be able to pass examinations creditably but also to be the highest type of medical practitioner

This suggestion is not intended to imply a letting down of the bars but to permit a certain latitude to medical schools in regard to the method of instruction Furthermore, such a procedure will stimulate competition in effort between medical schools and medical teachers in all subjects contained in the curriculum Finally, there will be developed methods of teaching, as well as teachers, that will be far superior to many now in vogue Medical education will be placed on a plane with education in general One needs but review the results of graduate education in medicine to be convinced of the value, in every respect, of educational freedom that is effectively supervised by men who are competent and whose sole interest lies in securing the best possible results in a field that is rich and fertile

Duplication or Differentiation in Medical Supervision

DR HAROLD RYPINS, Albany, N Y The primary object of medical education and supervision is the protection of the public health A complete program of medical supervision divides itself into major phases (1) providing the public with competently qualified practitioners and (2) eliminating the unqualified practitioners, charlatans and quacks The number of bodies now supervising medical education is impeding the progress of medical education The supervision of medical education should rest with the Association of American Medical Colleges, the Council on Medical Education and Hospitals, and various state departments of education The elimination of unqualified practitioners and quacks should rest with the various state licensing boards and the federation The importance of the elimination of quacks justifies the development of proper machinery and support from the public and a medical profession comparable to that now given to medical education Differentiation and distribution of the educational and police aspects of medical supervision would be of benefit to the progress of medical education and to the protection of the public health

(To be continued)

Educational Expert—Researches in the learning field are beginning to appear which point to some of the educational "expert's" fallacies Although he has been assuming that the way to get speed is to hold the stop watch on the child, he never had available conclusive scientific evidence in support of this assumption On the contrary, there are now available scientific data which pretty clearly demonstrate its falsity In a study by the writer and collaborators it was found that learning, when accuracy was emphasized, produced greater speed than when speed was emphasized—Myers, G C *Ment Hyg* **12** 22 (Jan) 1928

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST SUCH AS RELATE TO SOCIETY ACTIVITIES NEW HOSPITALS EDUCATION PUBLIC HEALTH ETC)

ARIZONA

Society News—Physicians of the Gila Valley organized the Graham County Medical Society at Safford, February 10, Dr John Newton Stratton, Safford, was elected president The society was officially received into the state medical association by the councilor for the middle district, Dr William W Watkins Phoenix, preliminary to the organization meeting at the office of Dr James W Morris, a dinner was served at the Safford Cafe

Public Health Conference—The state board of health has arranged for a public health and sanitary conference to be held at the University of Arizona, April 17-18 Health officers city engineers, water works operators and dairy inspectors are cordially invited to take part The program will include discussions of milk inspection public water supplies and sewage and garbage disposal The object of the conference is to assist officials who are responsible for the maintenance of sanitary conditions in towns

CALIFORNIA

Chiropractor with Fifteen Diplomas Prescribes Aphrodisiac—Chester C Cook Watsonville, a chiropractor, who was recently arrested for violating the medical practice act, pleaded guilty in court at Santa Cruz and was sentenced to pay a fine of $600 and serve 180 days in jail In view of the fact that he has a wife and four children the sentence was suspended on provision that he confine himself to the terms of the chiropractic license which the state issued him Cook admitted to an investigator of the state board of medical examiners that he delivered his own wife, last March, that he had given hypodermic injections of corpus luteum, and that he had treated a high school girl with aphrodisiac tablets and given her vaginal high frequency treatments for an anemic condition Hanging in Cook s office were fifteen chiropractic diplomas

Health Care After Dam Disaster—The St Francis Dam in the St Francisquito Canyon, which held a five mile lake of water burst suddenly in the early morning of March 13 and swept through villages, ranches and orchards in the rush of waters down the canyon to the sea The list of known dead, March 17 was 243 A considerable number of persons were still missing and relief organizations were then taking care of 768 people who were left without homes, food or clothing The state health officer promptly had an examination made of the water supplies of the towns affected and pronounced them safe for household purposes A typhoid immunization party of two physicians and three nurses was organized for Ventura County and the milk of all dairies which had been overflowed by water was ordered pasteurized The St Francis Dam was a part of the public water supply of Los Angeles, and that city already is said to have taken preliminary steps to make restitution for the losses incurred

Personal—Dr Jesse A King, Ojai has been appointed health officer of Ventura County to succeed Dr Adolph A Maulhardt——Dr Walter B Coffey, San Francisco Southern Pacific Hospital was guest of honor at a dinner attended by about 400 physicians March 3 Among the speakers were Drs Ray Lyman Wilbur, president of Stanford University, Robert Langley Porter, dean of the University of California Medical School, Edward T Dillon and Percy T Magan, Los Angeles James W Ward and Percy T Phillips, Santa Cruz and Oliver D Hamlin Oakland——Dr Euclid B Frick has resigned as superintendent of the San Francisco Hospital San Francisco, on account of ill health——Dr Edwin O Palmer has been appointed superintendent and business manager of the Hollywood Hospital, Los Angeles——Dr Frank E McCullough has been appointed city health officer of North Sacramento to succeed Dr Archibald A Atkinson

Society News—A special committee from the Casualty Insurance Claim Adjustors Association of Southern California addressed the industrial accident section of the Los Angeles County Medical Association March 8 on 'What the Insurance Carrier Wants from the Industrial Surgeon' This committee was appointed at the suggestion of the section to keep industrial surgeons informed on compensation problems——The Contra Costa County Medical Society has adopted a method of presenting its programs by the members themselves as a forum Unresolved pneumonia and gallbladder disease were taken up at the last two meetings this method has evoked more interest than the plan followed heretofore——Dr Frank W Lynch San Francisco, was guest of honor at a dinner meeting of the Los Angeles Obstetrical Society, February 9, when he gave an address on "Five Year End-Results in Carcinoma of the Cervix Uteri '——Dr Carl H Parker Pasadena addressed the San Bernardino County Medical Society, February 7, on "Radiographic Manifestations of Metastatic Malignancy," and Dr Montrose T Burrows, Pasadena, on 'Etiology and Treatment of Cancer"——D William B Faulkner, Jr, San Francisco addressed the Stanislaus County Medical Society, February 10, on "Thoracic Surgery" According to the report of the secretary of the society in *California and Western Medicine* Dr Faulkner presented a case of diaphragmatic hernia in which the stomach had reached the level of and was adherent to the clavicle

COLORADO

Fellowships in Psychiatry—The Colorado Psychopathic Hospital, University of Colorado has recently been awarded Commonwealth Fund fellowships These fellowships are awarded for two year periods—three beginning July, 1928 three beginning July, 1929, and so on to 1931 These fellowships are for the purpose of stimulating men to enter the field of psychiatry and to afford them fundamental training The first twelve months are to be spent in the fundamental training of psychiatry, the second twelve months in a continuation of this work with additional work in teaching and outpatient and traveling clinics There will also be opportunity for research and elective work The fellowships are adequately financed

KANSAS

Veteran Secretary Honored—The Shawnee County Medical Society gave a dinner, March 5, at Topeka in honor of Dr Earle G Brown, who has been secretary of the society for many years and for the last three was secretary of the state board of health A watch was presented to the guest of honor About 125 persons were present, the principal speaker was Dr Glover H Copher St Louis whose subjects were "Pathologic and Clinical Considerations in Thyrotoxicosis" and "Cholecystography Physiologic and Clinical Manifestations '

Society News—Dr Paul M Krall, Kansas City, addressed the Kansas City Academy of Medicine, recently, on "Differentiation of Nephroses and Nephritides"——Drs George E Knappenberger, Kansas City, Mo, and Ferdinand C Helwig, Kansas City discussed 'Clinical Heart Diseases' and "Cardiac Pathology," respectively before the Ottawa County Medical Society, recently——Dr Frank C Neff Kansas City Mo held a children's clinic before the Clay County Medical Society, February 10, at Clay Center——Drs Edward T Gibson Kansas City Mo held a neurologic clinic January 27, and Charles C Dennie, Kansas City, Mo, a dermatologic clinic, February 10, before the Kansas City Academy of Medicine

MARYLAND

Sir Humphry Rolleston Opens Thayer Lectureship—The trustees of Johns Hopkins University announced that the first course of lectures under the William Sydney Thayer and Susan Read Thayer lectureship in clinical medicine was given March 20-21, at the school of hygiene and public health by Sir Humphry Rolleston, regius professor of physic, University of Cambridge, England on "Heredity and Familiar Diseases of the Blood Forming Organs" and "Diseases Peculiar to Certain Races" The lectureship was endowed last year by friends of Dr Thayer during the session of the American Medical Association in Washington D C, when Dr Thayer was made President-Elect of the Association According to the terms of the gift the income from the fund is to defray the expenses of annual lecturers on subjects in clinical medicine, pediatrics neurology or borderline branches The lecturers are to be selected by a committee of professors at Johns Hopkins

MISSISSIPPI

Bills Introduced—House bill 755 provides that every physician who commits an abortion which is not necessary to prolong the life of the woman shall be guilty of manslaughter House bill 908 provides that teachers of public schools shall present a certificate from a licensed physician certifying to successful vaccination

MISSOURI

Society News—Dr Samuel H Snider, Kansas City, addressed the Brown County Medical Society, Hiawatha, March 9, on "Diagnosis and Treatment of Pulmonary Tuberculosis," and Dr Lawrence P Engel, Kansas City, the Lafayette County Medical Society, February 15, on The Use of Iodine in the Treatment of Goiter"

Regional Tuberculosis Institute—The National Tuberculosis Association, cooperating with the associations of Missouri and St Louis, and Washington University, will hold a two-weeks regional institute at the medical school of the university, beginning March 26, to train tuberculosis workers The program comprises classroom work, trips to sanatoriums, open-air schools and inspections of factories and civic groups Similar institutes will be held in other parts of the country, this one accommodating students from the Mississippi valley

Not a Child in St Louis Schools Contracts Smallpox—In an address before the Women's Chamber of Commerce of St Louis, March 1, Dr Max C Starkloff stated that not a single child in the public schools in St Louis had contracted smallpox since he became health commissioner—and that was thirty three years ago In reply to a request for confirmation of this remarkable record, Dr Starkloff said that it was made possible by systematic vaccination at the school of each child by the department of health, followed by inspection and reinspection of the vaccination by the division of health as well as by the division of hygiene in the public schools Before a child was permitted to enter school, the school authorities required a certificate from the health division showing a successful vaccination Although vaccination in Missouri is not compulsory, about thirty-three years ago the board of education adopted a rule requiring all children entering school to be vaccinated Opponents of vaccination at this time questioned this regulation The circuit court ruled that the school board had a right in the interest of public health to make such a rule and this was sustained by the supreme court of the state In contrast to the record in the public schools, St Louis has expended during Dr Starkloff's administration $90,000 for the care of parochial school children suffering from smallpox who were hospitalized by the city Vaccination is not compulsory in the parochial schools A petition, signed by about 5,000 persons, recently asked for abolition of the rule The board of education then changed the system so that vaccinations are no longer done by the health division at the school house Children must visit the health centers, the health division or their private physicians for vaccination Dr Starkloff considers that this change will make the rule less efficient It will not definitely fix responsibility if a child gets into school without protection from smallpox

NEBRASKA

Office of County Executive Secretary—The Omaha-Douglas County Medical Society has provided a new office for its executive secretary on the seventeenth floor of the Medical Arts Building, a picture of which appears in the state medical journal The office is arranged to encourage and develop the educational advantages of the clinical material of Omaha and make it available to visiting physicians The daily bulletin of clinics is posted, there are easy chairs, lounges, bridge tables, writing desks, medical journals, and a stenographer and a telephone, in short, it is a place where physicians may drop in and feel at home There is also in this building an auditorium where the regular meetings of the society are held on the second and fourth Tuesdays of each month and to which visiting physicians are always welcome There are no fees or charges

Society News—Among others, Dr Rollin Russell Best read a paper before the Omaha-Douglas County Medical Society, February 14, on "Hand Infections, Experimental and Clinical", Dr Manuel Grodinsky, "Sacral Anesthesia, Experimental and Clinical," and Drs Rodney W Bliss and Aura J Miller, "Subacute Bacterial Endocarditis" Dr Frank M Conlin addressed the society, February 24, on Glycosuria, Hyperthyroidism and Diabetes Mellitus", Dr Frank P Murphy on 'Abruptio Placentae," and Dr Willis H Taylor on Intermediate Cervical Repair"——The senior medical students of the University of Nebraska College of Medicine Omaha were addressed recently by Dr Henry J Lehnhoff, Lincoln secretary, Nebraska State Board of Medical Examiners, on medical examinations, licensing and reciprocity——At the annual meeting of the Sioux Valley Eye and Ear Academy, Omaha, February 15 Dr Sanford R. Gifford was elected president for 1928——Dr Isaiah W Irvin has been elected president this year of the Auburn Kiwanis Club——Dr William Walter Wasson, Denver addressed the Lancaster County Medical Society, recently, on The Hilum of the Lungs in Disease"

NEW YORK

Graduate Instruction in Albany County—The Medical Society of the County of Albany, in conjunction with the committee on public health and medical education of the state medical society, announces the following lectures

Diabetes Mellitus Dr Henry Rawle Geyelin New York April 6
Asthma Dr Robert A Cooke New York April 13
Scarlet Fever Dr Francis G Blake New Haven Conn April 20
Syphilis Dr Joseph G Hopkins New York April 27
Pernicious Anemia Dr Kenneth R McAlpin New York May 4
Pneumonia ' Dr Russell L Cecil New York May 11

Dr Douglass Appointed Field Secretary—Dr Stephen A Douglass, formerly director of the Milbank Fund Health Demonstration in Cattaraugus County and county health officer, has been appointed field secretary of the American Heart Association 370 Seventh Avenue, New York He will be at the service of organizations interested in the development of heart work Dr Douglass severed his connection with the demonstration in Cattaraugus County about January 1, and for a short time was superintendent of the Franklin County Tuberculosis Sanatorium Columbus, Ohio

Bills Introduced—Senate bill 947 and house bill 1282 provide means whereby a person whose registration or license in the professions is not legal, through some error or misunderstanding, may have it corrected Senate bill 998 increases the list of occupational diseases for which compensation is made Senate bill 999 and house bill 1349 provide compensation for the loss of hand or leg and define what constitutes such loss Senate bill 1000 and house bill 1329 provide that when the employer fails to pay the award of the Workmen's Compensation Commission judgment may be taken against him Senate bill 1050 and house bill 1215 would provide legal aid for claimants under the Workmen s Compensation Act House bill 430 would repeal the provision allowing payment of fines collected in vivisection cases to be paid to the society for the prevention of cruelty to animals House bill 444 provides that actions for malpractice must be brought within one year after they have been approved House bill 649 provides for medical inspectors in continuation schools House bill 1296 provides for the registration and regulation of roentgen-ray laboratories and machines House bill 1416 forbids the performance of autopsies in cases in which a near relative of the deceased protests, except when such autopsy is made on the order of the chief of police House bill 1423 and senate bill 960 provide for the addition to the state department of education of a bureau of psychiatric instruction House bill 1463 provides that statements of a deceased employee made to an attending physician, if written down by such physician, and reported to the employer, may be received in evidence House bill 1470 provides that the state commissioner of health shall have the power to establish cancer clinics in each of the counties of the state Senate bill 1098 provides that the cost of examination as to the sanity of Indians shall be charged against the state Senate bill 1123 exempts hospitals from real estate tax on property which is leased for the use of amateur recreation purposes The lessee pays to the tax district 4 5 per cent of the rental amount Senate bill 1187 prohibits the sale of lenses, spectacles, etc , at retail, unless a licensed physician or optometrist is in charge Senate bill 1227 prohibits the employment of children unless the consent of the society for the prevention of cruelty has been obtained Senate bill 1228 provides for the sexual sterilization of inmates of state institutions Senate bill 1236 provides that where insanity is pleaded as a defense, the trial shall be postponed while the defendant is placed under observation Senate bill 1301 provides for a medical advisory committee to the state labor council Senate bill 1313 provides that departmental physicians shall not treat claimants under the Workmen's Compensation Act or recommend any other physician, but the treatment needed may be recommended House bill 1065 provides for a certificate of physical fitness as a prerequisite of attendance to the public schools House bill 1456 provides for the waiving of compulsory vaccination when the parent or guardian objects

New York City

Revision of Nomenclature of Diseases—Dr Van Horne Norrie, New York, writes that a committee has been appointed to revise the Bellevue Hospital Nomenclature of Diseases and Conditions, and that it would appreciate suggestions concerning the changes or additions which should be in the terminology Communications should be addressed to the director, first medical division, Bellevue Hospital, New York

Resident Staff Quits Hospital—Seven interns comprising the entire resident staff of Unity Hospital, Brooklyn left the institution, March 5 according to the New York *Times* after one of their number, Dr. Jacob Pearlstein was dismissed The hospital was not affected, the superintendent said as former interns offered their service until new interns could be selected Unity Hospital is a private nonsectarian hospital with accommodations for about 250 patients The interns who left were Drs Joseph Gottesman, Jacob Pearlstein Sidney M Barth Rubin Klein, Morris Podnos, Louis Unger and Martin H Greenfield

Personal—Dr Murray Jacobs has resigned as anesthetist at the Jewish Memorial Hospital after ten years service and has been appointed adjunct attending gynecologist——Dr Anthony Trevisano formerly connected with the Manhattan State Hospital, has been appointed medical officer of the U S Veterans Bureau Hospital, Kingsbridge Road——Dr George H Semken New York, lectured at the Mayo Foundation, Rochester, Minn , March 8-9, on cancer of the lip, jaws and oral cavity——Dr Bret Ratner has been appointed clinical professor of pediatrics and lecturer in immunology at the University and Bellevue Hospital Medical College——Dr Samuel M Kaufman has been appointed chief of the department of dermatology and syphilis at the German Polyclinic

Society News—Dr Richard Kovacs addressed the Medical Association of the Greater City of New York, March 19 on "Physical Therapy in General Practice'——The health commissioner, Dr Louis I Harris, is forming an advisory council of twenty-five specialists, representatives of social agencies and the medical societies, the clergy and prominent citizens to assist in formulating the general policies of the health department——At the annual meeting of the New York Electrotherapeutic Society, March 7 Dr Charles R Brooke was elected president and Dr Madge C L McGuinness, secretary——The Medical Society of the County of Kings held a symposium on cancer, March 20 the speakers were Drs Henry M Feinblatt, Frederic E Elliott, Henry Beeckman Delatour, John C Graham, Herbert T Wikle John E Jennings and John C A Gerster, all of New York and Martin B Tinker of Ithaca The joint committee on graduate education has arranged a series of graduate courses in medicine, surgery and the specialties to be given during April at various hospitals the fee in each course is $10 A graduate course to be given at the Kings County Hospital under the auspices of the joint committee on graduate education, April 23-28, consisting of intensive general medical and surgical demonstrations, carries a fee of $35

OHIO

Personal—Dr Charles O Probst, Columbus, has been appointed medical director of the Franklin County Tuberculosis Sanatorium, succeeding Dr Stephen Douglass, resigned——The health departments of Hamilton and Butler counties have consolidated, and Dr Clifford J Baldridge was made health officer at a salary of $5,000 a year

Lectures in Biophysics—The H K Cushing Laboratory of Experimental Medicine has arranged a course of lectures in biophysics given by Dr Hugo Fricke, Copenhagen The lectures are held each Monday from 5 to 6 p m beginning February 20 in the medical school building of Western Reserve University This course is conducted for the benefit of investigators in experimental biology and medicine The average attendance at each lecture has been about fifty

Dr Upham Appointed Dean—The trustees of Ohio State University approved March 12 the appointment of Dr John H J Upham as dean of the college of medicine Dr Upham, since August has been the acting dean He has been a member of the faculty of the medical school and its predecessors for about thirty years He was secretary of the Ohio State Medical Association from 1907 to 1913 and the president in 1914 in 1919 he was president of the Columbus Academy of Medicine Dr Upham is also a member of the Ohio State Medical Board He was formerly a member of the Judicial Council of the American Medical Association and now is a member of the Board of Trustees

Hospital News—A new U S Marine Hospital, costing $1 300 000 is being erected at Cleveland and the first section is to be ready for occupancy in October when patients from the old marine hospital Lakeside Avenue and East Ninth Street, will be moved to the new 10 acre site Fairmount Road and East One Hundred and Twenty-Fourth Street The hospital will have 250 beds——A former mayor of Wellsville, Mr Byron D Beacom, has given $50,000 toward the construction of a memorial hospital, and has given his residence to the city to be converted into a nurses' home——Dr William A Quinn has been elected chief of staff of the Portsmouth General Hospital for the ensuing year

OREGON

Society News—The Pacific Coast Surgical Association met at Portland, February 22-25, two days were devoted to clinics and two days to the reading of papers at Seaside Among others, Drs John F Cowan, San Francisco, spoke on How New Joints Form' , Charles E Phillips, Los Angeles, "Compilation of Statistics as a Guide to Medical Efficiency , Ernst A Sommer, Portland 'End-Results of Fractures and Dislocations of the Carpal Bones," and John B McNerthney, Tacoma, Wash , 'Laryngeal Paralysis and Surgery of the Thyroid '——The Portland Society of Obstetricians and Gynecologists was formed, February 8 Dr Albert L Mathieu was made president and Dr Albert W Holman, secretary The purpose of the organization is to promote knowledge relating to gynecology and obstetrics

Charles J Dean, M D , Inc , Bankrupt—The Public Health League of Washington notes that Dr Charles J Dean, his two incorporated companies, and Robert S Parker, chiropractor, associated with him, have filed petitions in voluntary bankruptcy in the federal district court Portland Dean has been quacking it for years His Oregon license was revoked in 1914 and restored again the same year In 1924 his Oregon license was again revoked and in 1927 the courts restored it Dean s line of quackery is "curing' piles In Dean s personal petition in bankruptcy, he listed liabilities of over $114,000, and assets of less than $1,700 Among his liabilities were a circuit court judgment obtained January 28 by Gus Emrick for $8 791 71 a claim of $25 441 85 by Herman A Behrens of Bremerton, Wash , and a claim of $25,000 by Harry W Gross of Camas, Wash Charles J Dean, M D , Inc of Washington listed similar liabilities and placed its assets at $1 515 72 Charles J Dean, M D , Inc , of Oregon placed its liabilities at $66,989 88

PENNSYLVANIA

What Good Roads Did for a County Society—Twenty-two former members of the Allegheny County Medical Society, the New Kensington group who for years have given allegiance to the society although they lived in Westmoreland County have recently returned to the Westmoreland County Medical Society on account of the development of good roads The Allegheny County Medical Society, although regretting their loss believes that mutual benefit will be derived from their newly formed association The sixth annual clinic of the Westmoreland County Medical Society will be held at Greensburg, April 27 to which members of the Allegheny County Medical Society are cordially invited The clinicians will be Drs Harlow Brooks New York, John B Deaver, Philadelphia, William J Mayo Rochester Minn and Arthur C Morgan president of the Medical Society of the State of Pennsylvania

Philadelphia

Jefferson Claims Bequest Rejected by Harvard—Jefferson Medical College has given notice in Orphans Court of an intention to claim a $67 000 trust fund left by Dr James Ewing Mears, noted medical writer and surgeon of this city, to Harvard University for the study of eugenics which that university rejected a year ago The claim is to be presented to Judge Thompson who preliminary to a hearing in the matter, allowed a citation March 15 notifying all parties interested in the estate of Dr Mears that the medical college wishes to offer testimony in support of its claim

Society News—The Philadelphia County Medical Society will be addressed March 28, by Drs Allen K Krause and Charles R Austrian of Johns Hopkins University School of Medicine, Baltimore on the early diagnosis of tuberculosis——The Philadelphia Pediatric Society was addressed March 13 by Drs Douglas MacFarlan on The Hard of Hearing Child , Samuel R Skillern, Jr, salient points of sinusitis in infants and young children and Aaron Capper "Fate and Development of the Immature as Well as the Premature Child"

Personal—The staff and patients of the U S Veterans' Hospital at Philadelphia gave a reception March 9 as a testimonial to Dr Henry L Stick on the eve of his transfer to the veterans hospital at Little Rock Ark Dr Stick will be succeeded by Dr George M Melvin of the veterans bureau hospital at North Chicago, Ill——Dr Herbert Fox recently went to Beaufort, N C, at the invitation of the U S Bureau of Fisheries to investigate cancerous tail diseases among young terrapin propagated at that station——Dr Ross H Skillern has been invited by the British Medical Association to deliver an address at its annual convention in Cardiff, Wales, July 23-26, on "Diagnosis and Surgical Treatment of Ethmoiditis"——At the annual banquet of the Anatomical League, March 15, the guest of honor was Dr Addinell Hewson, founder of the league at Temple University about fifteen years ago

SOUTH CAROLINA

Bill Introduced—House bill 1666 provides for an *occupational tax on physicians and dentists* of $10 when the income is $5,000, or less, and $20 when the income is more than $5,000

TENNESSEE

Personal—Dr Leonard W Edwards has been elected president of the board of St Thomas' Hospital, Nashville——Dr William M Hardy, assistant secretary of the state medical association, has been elected assistant city health officer of Nashville——The new home of Dr Henry L Douglass, Bridgeton Road, Nashville, was destroyed by a fire of *unknown origin*, February 18——The state health commissioner, Dr Eugene L Bishop, who recently made an inspection trip through Lake and Dwyer counties, found it is reported that more than 500 householders have agreed to screen their houses in the antimalaria campaign which the state health department is making in that section

Blood of Tennesseeans for African Yellow Fever—About twenty residents of Memphis who had yellow fever in the epidemic of 1897 have volunteered to give specimens of blood to be forwarded to the International Health Board workers of the Rockefeller Foundation in British Nigeria, Africa, to be tried out as a treatment for yellow fever, now present in that region The request for volunteers at Memphis was made by Dr William Krauss, professor of tropical medicine at the University of Tennessee College of Medicine Memphis Many persons who had yellow fever in Memphis, in the epidemic of 1878-1879, volunteered, but they were not considered eligible

Society News—Sir Wilfred T Grenfell, well known medical missionary of Labrador, will speak in Nashville, April 4, under the auspices of the World Fellowship Committee of the Ward-Belmont school student Y W C A——Dr William Carter Smith among others, addressed the Vanderbilt Medical Society, Nashville March 2 in the amphitheater of the medical school, on a 'Case of Thyrotoxicosis with Primary Anemia"——Dr Eugene L Bishop, state health commissioner, addressed the Nashville Optimist Club, March 2 on problems confronting the state from the standpoint of health——The Montgomery County Medical Society was the guest, March 21, of the Christian County (Ky) Medical Society at Hopkinsville at a dinner meeting Among the speakers were Drs Barney Brooks professor of surgery, Vanderbilt University School of Medicine, Nashville, and Dr Hugh J Morgan, Nashville, associate professor of medicine Vanderbilt University School of Medicine whose subjects were "Diagnosis and Treatment of Gallbladder Diseases' and "Pathogenesis and Treatment of Syphilis," respectively

UTAH

Society News—Dr Fuller B Bailey addressed the Salt Lake County Medical Society recently, on pneumonia Dr William E Hunter, on "Diaphragmatic Hernia," and Dr James P Kerby on "Eventration of the Diaphragm'——Dr Martin C Lindem, Salt Lake City, addressed the Utah County Medical Society, recently, on 'Back Injuries"——Dr Leslie A Smith, Ogden, addressed the Weber County Medical Society, recently, on "Nephritis in Children"

WASHINGTON

Unvaccinated Children Return to School—According to the *Health Messenger* eighty-eight unvaccinated children who had been barred from school in the vicinity of Walla Walla from the first of the year were able to return, February 20, as the danger of smallpox had passed Among 4433 pupils, the parents of eighty-eight refused to have them vaccinated

Society News—The guest of honor at the annual dinner of the Pierce County Medical Society, Tacoma, February 7, was W H Cross, who has spent many years in China, his subject was "Medicine in China"——The guest of honor at the annual meeting of the Seattle Orthopedic Society, February 24-25, was Dr Hiram Winnett Orr, Lincoln, Neb, who gave clinics on osteomyelitis and an illustrated lecture at the annual banquet on skeletal fixation of fractures——Dr Oscar S Proctor addressed the King County Medical Society, February 6, on 'The Surgery of Pulmonary Tuberculosis"

One Year Under the Basic Science Law—The chairman of the Basic Science Board of Washington, Dr David C Hall, Seattle, presents a summary of the first year during which the basic science law has operated Two examinations have been held which have not been passed by any "drugless healers" One chiropractor, six osteopaths and eighty doctors of medicine passed In the year preceding the passage of the basic science law, there were licensed in Washington forty-four "drugless healers," forty-eight chiropractors, thirty-eight osteopaths and forty-seven doctors of medicine In other words, since the law became effective, 94 per cent of those passing the examinations were doctors of medicine whereas in the year preceding only about 27 per cent of those who were licensed were doctors of medicine The board is comprised of the professor of anatomy at the University of Washington, a doctor of philosophy in chemistry at the Washington State College at Pullman, the director of athletics at Washington State College, an osteopath who works on the staff of the physical training department of the college as a rubber, and the university physician at the University of Washington

WISCONSIN

The First William Snow Miller Lecture—The board of regents of the University of Wisconsin has appointed Dr T Wingate Todd, Henry Willson Payne professor of anatomy, Western Reserve University School of Medicine, Cleveland, to give the first William Snow Miller lecture, March 29, his subject will be 'The Medieval Physician" This lectureship was established by the Phi Beta Pi medical fraternity in honor of the seventieth birthday of Dr Miller, who is now emeritus professor of anatomy, and is well known especially for his study of the microscopic anatomy of the lung

Personal—Dr Hugh H Williams has been elected health officer of Sparta to succeed the late Dr Vernon W Stiles——Dr Karl E Kassowitz has retired as clinical director of Muirdale Sanatorium, Wauwatosa, to enter private practice, but will remain on the staff as senior resident physician, a position created by the county board at the request of the manager of the Milwaukee County institutions——Dr Gustave Windesheim, Kenosha, has been elected president of the state board of health to succeed Dr Otho A Fiedler Sheboygan, whose term expired——Dr Harve R Sharpe has been appointed physician to the Fon du Lac County Asylum to succeed Dr George B McKnight

Society News—The University of Wisconsin Medical Society, Madison was addressed, March 6, by Dr Karl W Doege, preceptor, Marshfield, on 'Tumors of the Mediastinum' and by Dr John A E Eyster, professor of physiology, University of Wisconsin Medical School, on 'Cardiac Mensuration'——The Dane County Medical Society and the Milwaukee Neuro-Psychiatric Society held a joint meeting, January 26 at Madison, the eight papers were presented by members of the neuropsychiatric department of the university faculty——Dr Philip Lewin Chicago, addressed the Outagamie County Medical Society, Appleton, February 9, on 'Orthopedic Surgery for the General Practitioner"——The Racine County Medical Society was host to the medical societies of Kenosha and Walworth County, February 16, at Racine Among the speakers were Dr Karl W Doege Marshfield, president-elect of the State Medical Society of Wisconsin, and Drs John J McGovern, Milwaukee, John W Lane Kenosha, and Charles R Bardeen, Madison Dr Frank W Pope, Racine, was toastmaster, and sixty physicians attended

GENERAL

Smallpox Stops Tourists—About 2000 American tourists were forbidden *to land from the steamships Doric and Rotterdam* at Beirut, Syria, March 4, as that city had been placed under strict quarantine on account of a virulent epidemic of smallpox which started in the refugee camps and up to March 1 had caused twenty-two deaths The tourists were en route to the Holy Land

Senate Favors Retirement for Emergency Officers—The Senate passed the Tyson bill, March 15 This bill *provides* that officers of the army, navy and marine corps during the World War other than the regular officers who incurred physical disability in line of duty and who had been *or* in the terminology Communications should be addressed to the director, first medical division, Bellevue Hospital, New York

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Personal—Dr Charles O Probst, Columbus, has been appointed medical director of the Franklin County Tuberculosis Sanatorium, succeeding Dr Stephen Douglass, resigned——The health departments of Hamilton and Butler counties have consolidated, and Dr Clifford J Baldridge was made health officer at a salary of $5,000 a year

Lectures in Biophysics—The H K Cushing Laboratory of Experimental Medicine has arranged a course of lectures in biophysics given by Dr Hugo Fricke, Copenhagen The lectures are held each Monday from 5 to 6 p m beginning February 20 in the medical school building of Western Reserve University This course is conducted for the benefit of investigators in experimental biology and medicine The average attendance at each lecture has been about fifty

Dr Upham Appointed Dean—The trustees of Ohio State University *approved, March 12 the appointment of Dr John* H J Upham as dean of the college of medicine Dr Upham since August, has been the acting dean He has been a member of the faculty of the medical school and its predecessors for about thirty years He was secretary of the Ohio State Medical Association from 1907 to 1913 and the president in 1914 in 1919 he was president of the Columbus Academy of Medicine Dr Upham is also a member of the Ohio State Medical Board He was formerly a member of the Judicial Council of the American Medical Association and now is a member of the Board of Trustees

Hospital News—A new U S Marine Hospital, costing $1,300,000, is being erected at Cleveland and the first section is to be ready for occupancy in October when patients from the old marine hospital, Lakeside Avenue and East Ninth Street, will be moved to the new 10 acre site, Fairmount Road and East One Hundred and Twenty-Fourth Street The hospital will have 250 beds——A former mayor of Wellsville, Mr Byron D Beacom, has given $50,000 toward the construction of a memorial hospital, and has given his residence to the city to be converted into a nurses' home——Dr William A Quinn has been elected chief of staff of the Portsmouth General Hospital for the ensuing year

OREGON

Society News—The Pacific Coast Surgical Association met *at Portland, February 22-25, two days were devoted* to clinics and two days to the reading of papers at Seaside Among others, Drs John F Cowan, San Francisco, spoke on "How New Joints Form", Charles E Phillips, Los Angeles "Compilation of Statistics as a Guide to Medical Efficiency', Ernst A Sommer, Portland "End-Results of Fractures and Dislocations of the Carpal Bones," and John B McNerthney, Tacoma, Wash, Laryngeal Paralysis and Surgery of the Thyroid"——The Portland Society of Obstetricians and Gynecologists was formed, February 8 Dr Albert L Mathieu was made president and Dr Albert W Holman, secretary The purpose of the organization is to promote knowledge relating to gynecology and obstetrics

Charles J Dean, M D, Inc, Bankrupt—The Public Health League of Washington notes that Dr Charles J Dean, his two incorporated companies, and Robert S Parker, chiropractor, associated with him, have filed petitions in voluntary bankruptcy in the federal district court, Portland Dean has been quacking it for years His Oregon license was revoked in 1914 and restored again the same year In 1924 his Oregon license was again revoked and in 1927 the courts restored it Dean s line of quackery is "curing' piles In Dean s personal petition in bankruptcy, he listed liabilities of over $114 000, and assets of less than $1,700 Among his liabilities were a circuit court judgment obtained January 28 by Gus Emrick for $8,791 71, a claim of $25 441 85 by Herman A Behrens of Bremerton, Wash, and a claim of $25 000 by Harry W Gross of Camas, Wash Charles J Dean M D, Inc of Washington, listed similar liabilities and placed its assets at $1 515 72 Charles J Dean, M D, Inc, of Oregon placed its liabilities at $66,989 88

PENNSYLVANIA

What Good Roads Did for a County Society—Twenty-two former members of the Allegheny County Medical Society, the New Kensington group, who for years have given allegiance to the society although they lived in Westmoreland County, have recently returned to the Westmoreland County Medical Society on account of the development of good roads The Allegheny County Medical Society, although regretting their loss believes that mutual benefit will be derived from their newly formed association The sixth annual clinic of the Westmoreland County Medical Society will be held at Greensburg, April 27, to which members of the Allegheny County Medical Society are cordially invited The clinicians will be Drs Harlow Brooks, New York, John B Deaver, Philadelphia, William J Mayo Rochester Minn, and Arthur C Morgan, president of the Medical Society of the State of Pennsylvania

Philadelphia

Jefferson Claims Bequest Rejected by Harvard—Jefferson Medical College has given notice in Orphans Court of an intention to claim a $67,000 trust fund left by Dr James Ewing Mears, noted medical writer and surgeon of this city, to Harvard University for the study of eugenics, which that university rejected a year ago The claim is to be presented to Judge Thompson who preliminary to a hearing in the matter, allowed a citation, March 15, notifying all parties interested in the estate of Dr Mears that the medical college wishes to offer testimony in support of its claim

Society News—The Philadelphia County Medical Society will be addressed, March 28 by Drs Allen K Krause and Charles R Austrian of Johns Hopkins University School of Medicine, Baltimore on the early diagnosis of tuberculosis——The Philadelphia Pediatric Society was addressed March 13, by Drs Douglas MacFarlan on "The Hard of Hearing Child", Samuel R Skillern, Jr, salient points of sinusitis in infants and young children, and Aaron Capper "Fate and Development of the Immature as Well as the Premature Child"

Personal—The staff and patients of the U S Veterans' Hospital at Philadelphia gave a reception, March 9 as a testimonial to Dr Henry L Stick on the eve of his transfer to the veterans hospital at Little Rock Ark Dr Stick will be succeeded by Dr George M Melvin of the veterans bureau hospital at North Chicago, Ill ——Dr Herbert Fox recently went to Beaufort, N C, at the invitation of the U S Bureau of Fisheries to investigate cancerous tail diseases among young terrapin propagated at that station ——Dr Ross H Skillern has been invited by the British Medical Association to deliver an address at its annual convention in Cardiff, Wales, July 23 26, on "Diagnosis and Surgical Treatment of Ethmoiditis"——At the annual banquet of the Anatomical League, March 15, the guest of honor was Dr Addinell Hewson, founder of the league at Temple University about fifteen years ago

SOUTH CAROLINA

Bill Introduced—House bill 1666 provides for an occupational tax on physicians and dentists of $10 when the income is $5,000, or less, and $20 when the income is more than $5,000

TENNESSEE

Personal.—Dr Leonard W Edwards has been elected president of the board of St Thomas' Hospital, Nashville ——Dr William M Hardy, assistant secretary of the state medical association, has been elected assistant city health officer of Nashville ——The new home of Dr Henry L Douglass, Bridgeton Road, Nashville was destroyed by a fire of unknown origin, February 18 ——The state health commissioner, Dr Eugene L Bishop, who recently made an inspection trip through Lake and Dwyer counties, found, it is reported, that more than 500 householders have agreed to screen their houses in the antimalaria campaign which the state health department is making in that section

Blood of Tennesseeans for African Yellow Fever—About twenty residents of Memphis who had yellow fever in the epidemic of 1897 have volunteered to give specimens of blood to be forwarded to the International Health Board workers of the Rockefeller Foundation in British Nigeria, Africa, to be tried out as a treatment for yellow fever, now present in that region The request for volunteers at Memphis was made by Dr William Krauss, professor of tropical medicine at the University of Tennessee College of Medicine Memphis Many persons who had *yellow* fever *in* Memphis, in the epidemic of 1878-1879, volunteered, but they were not considered eligible

Society News—Sir Wilfred T Grenfell, well known medical missionary of Labrador, will speak in Nashville, April 4, under the auspices of the World Fellowship Committee of the Ward-Belmont school student Y W C A ——Dr William Carter Smith, among others, addressed the Vanderbilt Medical Society, Nashville, March 2, in the amphitheater of the medical school, on a "Case of Thyrotoxicosis with Primary Anemia"——Dr Eugene L Bishop, state health commissioner, addressed the Nashville Optimist Club, March 2, on problems confronting the state from the standpoint of health ——The Montgomery County Medical Society was the guest, March 21, of the Christian County (Ky) Medical Society at Hopkinsville at a dinner meeting Among the speakers were Drs Barney Brooks professor of surgery, Vanderbilt University School of Medicine, Nashville, and Dr Hugh J Morgan, Nashville, associate professor of medicine, Vanderbilt University School of Medicine whose subjects were "Diagnosis and Treatment of Gallbladder Diseases' and "Pathogenesis and Treatment of Syphilis," respectively

UTAH

Society News—Dr Fuller B Bailey addressed the Salt Lake County Medical Society recently, on pneumonia Dr William E Hunter, on "Diaphragmatic Hernia" and Dr James P Kerby on "Eventration of the Diaphragm" ——Dr Martin C Lindem, Salt Lake City, addressed the Utah County Medical Society, recently, on 'Back Injuries" ——Dr Leslie A Smith, Ogden, addressed the Weber County Medical Society, recently, on "Nephritis in Children"

WASHINGTON

Unvaccinated Children Return to School—According to the *Health Messenger* eighty-eight unvaccinated children who had been barred from school in the vicinity of Walla Walla from the first of the year were able to return, February 20, as the danger of smallpox had passed Among 4,433 pupils, the parents of eighty-eight refused to have them vaccinated

Society News—The guest of honor at the annual dinner of the Pierce County Medical Society, Tacoma, February 7, was W H Cross, who has spent many years in China, his subject was 'Medicine in China'——The guest of honor at the annual meeting of the Seattle Orthopedic Society February 24-25, was Dr Hiram Winnett Orr Lincoln, Neb, who gave clinics on osteomyelitis and an illustrated lecture at the annual banquet on skeletal fixation of fractures ——Dr Oscar S Proctor addressed the King County Medical Society, February 6 on The Surgery of Pulmonary Tuberculosis"

One Year Under the Basic Science Law—The chairman of the Basic Science Board of Washington Dr David C Hall, Seattle, presents a summary of the first year during which the basic science law has operated Two examinations have been held which have not been passed by any "drugless healers" One chiropractor six osteopaths and eighty doctors of medicine passed In the year preceding the passage of the basic science law, there were licensed in Washington forty-four "drugless healers forty-eight chiropractors, thirty-eight osteopaths and forty seven doctors of medicine In other words since the law became effective, 94 per cent of those passing the examinations were doctors of medicine whereas in the year preceding only about 27 per cent of those who were licensed were doctors of medicine The board is comprised of the professor of anatomy at the University of Washington, a doctor of philosophy in chemistry at the Washington State College at Pullman, the director of athletics at Washington State College an osteopath who works on the staff of the physical training department of the college as a rubber, and the university physician at the University of Washington

WISCONSIN

The First William Snow Miller Lecture—The board of regents of the University of Wisconsin has appointed Dr T Wingate Todd, Henry Willson Payne professor of anatomy Western Reserve University School of Medicine, Cleveland to give the first William Snow Miller lecture, March 29 his subject will be "The Medieval Physician" This lectureship was established by the Phi Beta Pi medical fraternity in honor of the seventieth birthday of Dr Miller, who is now emeritus professor of anatomy, and is well known especially for his study of the microscopic anatomy of the lung

Personal—Dr Hugh H Williams has been elected health officer of Sparta to succeed the late Dr Vernon W Stiles ——Dr Karl E Kassowitz has retired as clinical director of Muirdale Sanatorium, Wauwatosa, to enter private practice, but will remain on the staff as senior resident physician a position created by the county board at the request of the manager of the Milwaukee County institutions ——Dr Gustave Windesheim, Kenosha, has been elected president of the state board of health to succeed Dr Otho A Fiedler Sheboygan, whose term expired ——Dr Harve R Sharpe has been appointed physician to the Fon du Lac County Asylum to succeed Dr George B McKnight

Society News —The University of Wisconsin Medical Society, Madison, was addressed, March 6, by Dr Karl W Doege, preceptor, Marshfield, on 'Tumors of the Mediastinum,' and by Dr John A E Eyster, professor of physiology, University of Wisconsin Medical School, on 'Cardiac Mensuration"——The Dane County Medical Society and the Milwaukee Neuro-Psychiatric Society held a joint meeting, January 26, at Madison, the eight papers were presented by members of the neuropsychiatric department of the university faculty ——Dr Philip Lewin Chicago, addressed the Outagamie County Medical Society, Appleton, February 9, on Orthopedic Surgery for the General Practitioner'——The Racine County Medical Society was host to the medical societies of Kenosha and Walworth County, February 16, at Racine Among the speakers were Dr Karl W Doege Marshfield, president-elect of the State Medical Society of Wisconsin, and Drs John J McGovern, Milwaukee, John W Lane Kenosha, and Charles R Bardeen, Madison Dr Frank W Pope, Racine, was toastmaster, and sixty physicians attended

GENERAL

Smallpox Stops Tourists—About 2 000 American tourists were forbidden to land from the steamships *Doric* and *Rotterdam* at Beirut, Syria, March 4, as that city had been placed under strict quarantine on account of a virulent epidemic of smallpox which started in the refugee camps and up to March 1 had caused twenty-two deaths The tourists were en route to the Holy Land

Senate Favors Retirement for Emergency Officers—The Senate passed the Tyson bill, March 15 This bill provid that officers of the army, navy and marine corps during t World War other than the regular officers who incu physical disability in line of duty and who had been or hereafter within a year be rated with 30 per cent disability by the veterans bureau shall be placed on a separate retired list and shall be entitled to the same privileges as are accorded to officers of the regular corps who are retired for physical disability in line of duty The Senate has twice passed a similar bill and four times it has been favorably reported by the committee of the House

Society News—The tenth annual session of the Western School for Physical Therapy will be at the Hotel President, Kansas City Mo, April 16-19 The instructors will be Drs Burton B Grover, Colorado Springs Colo, William B Snow, New York, Joseph E G Waddington, Detroit, James C Elsom, Madison, Wis, Edwin N Kime, Indianapolis, Argus D Willmoth Louisville, Ky Mary L H A Snow, New York, Curran Pope, Louisville, Ky, and Clinton K Smith, Kansas City Mo The secretary is Dr Charles W Fassett, 115 East Thirty First Street, Kansas City Mo——At the annual meeting of the American Heart Association Boston, February 6 the following officers were reelected for the ensuing year Drs James B Herrick, Chicago, president, William H Robey vice president, Haven Emerson, New York, secretary, and Paul D White, Boston, treasurer

Meeting of Hospital Association—The thirteenth annual convention of the Catholic Hospital Association of the United States and Canada and the second annual Hospital Clinical Congress of North America will be held in the Cincinnati Music Hall, Cincinnati, June 18 22 The fourth annual convention of the International Guild of Nurses will be held at the same time This convention and congress will comprise general scientific meetings, special clinics or demonstrations of hospital departments, and 300 commercial and educational exhibits Authorities in medicine, surgery, pathology, nursing dietetics and hospital administration, architecture and engineering will lecture and demonstrate in clinics representing departments of the modern hospital All persons interested in medical and hospital service are invited to attend Further information may be obtained from Dr John R Hughes, Marquette University, Milwaukee, general chairman of the convention and congress

Commonwealth Fund Appropriations—At the February meeting of the board of directors of the Commonwealth Fund New York, $358 438 was appropriated for the rural hospital program for which during the last five years awards have *been made for hospitals in Farmville, Va Glasgow, Ky ,* Farmington, Maine, Beloit Kan, and Wauseon Ohio Among other appropriations were the following

Six two year fellowships in psychiatry University of Colorado Medical School	$27 000
Five three year fellowships for psychiatrists Henry Phipps Psychiatric Clinic Baltimore	45 000
New York Committee on Mental Hygiene for operating expenses	4 750
Cardiac clinic Johns Hopkins University Hospital	3 800
Southern Pediatric Seminar for scholarships	2 000

The following funds were appropriated by the board at the December meeing

For surveys or rural health work by American Public Health Association	$22 500
Two year study of encephalitis at the Pennsylvania Hospital	10 000
Child Welfare League of America	10 000
For cardiac work of New York Tuberculosis and Health Association	7 500
For study of child care in homes by the National Conference of Catholic Charities	16 500

Recommendations of Conference on Surgical Gauze—The U S Department of Commerce was requested to call a conference of manufacturers, distributors and consumers of surgical gauze to consider the practicability of eliminating unnecessary varieties in widths and lengths A survey had been made by committees to gather data on which to base recommendations The conference was held in New York, February 15 In accordance with the unanimous action taken the department of commerce submits for the approval of the industry a simplified schedule for the stock varieties of this commodity The conference agreed (1) to reduce the constructions of surgical gauze from 15 to 7, (2) to reduce the constructions of crinolines from 5 to 3, (3) to reduce the constructions of bandage rolls from 10 to 3 and to eliminate 5 and 6 yard put-ups (4) to reduce the widths of bandages from 8 to 6 eliminating 5 yard put-ups and retaining 44 by 40, and (5) to reduce the constructions in package goods from 6 to 4 in 25 yard lengths, to reduce the package goods in 10 yard lengths from 4 to zero, to reduce constructions of package goods in 5 yard lengths from 7 to 3 and to reduce constructions in package goods in 1 yard lengths from 6 to 3 The conference was of the opinion that other reductions should be effected, and requested all interests to cooperate *with the standing committee in determining other items that* could be eliminated at the first revisional conference

Foreign Letters

LONDON

(From Our Regular Correspondent)

Feb 25, 1928

Report of the Medical Research Council

The annual report of the Medical Research Council contains much of interest and importance It emphasizes the value of the steps recently taken to create an imperial research service For the first time the imperial conference discussed the organization of research work in different parts of the empire A research subcommittee was appointed and coordination is now being secured between research organizations in this country and the equivalent organizations, either in being or foreshadowed in India and the dominions The work of the council is further being brought into close touch with similar work in the colonies, protectorates and mandated territories A colonial medical research council has been appointed by the government

THE CIRCULATION OF THE BLOOD

The work of Sir Thomas Lewis on the blood vessels of the skin is reviewed This work was begun during the war when Sir Thomas was devoting attention to the "irritable heart of soldiers' and has assumed great importance It has been shown that the capillaries have independent power of changing their caliber and that almost all injuries to or irritation of the skin act by liberation of a chemical substance which dilates the vessels This seems to be a substance like histamine

FILTER-PASSING VIRUSES

The work on filter-passing viruses continues, but not much *progress has been made during the year The council hopes* that Gye's researches in connection with the origin of cancer may be fully confirmed, but such confirmation has not been obtained However Dr Gye 'has found no reason to modify his views"

VITAMIN D

Thanks to the work of students whom the Medical Research Council has assisted, vitamin D has been distinguished from vitamin A The latter is not in any sense a "sunlight vitamin," nor does it exert influence on rickets In its absence growth is stunted and eye troubles tend to develop It has been discovered that the livers of cattle and sheep afford ten times as much vitamin A as cod liver oil This discovery has made available a new and most valuable food factor According to the report, 'the great majority of our population are suffering from a deficiency of vitamins A and D *The cost of this deficiency in human suffering and economic* loss is incalculable, but certainly vast" Pointing out that the supply of milk fat is inadequate for the minimal needs of the population, the report adds "The place of butter cannot be supplied by margarine so long as it is deficient in vitamins The crucial problem, however, for this and other countries—though probably in no other country is the nutritional need more pressing than at present in this—is not now therefore the hopeless problem offered by the apparently inevitable shortage of milk fat, it is the problem of the supply of fat soluble vitamins, and this, in the light of the discoveries just described, can now be cheerfully faced Our national needs of vitamin A can be met by its addition from liver fat to the diet, either with butter or with margarine or in other ways The home supply is readily supplemented, if necessary, by empire produce, and it has been found already that the vitamin content of fat from imported New Zealand liver is the same as that from home-killed animals It will be noted that these fats extracted from liver are wholly free from the unpleasant flavor of fish oils, and the low melting points of liver fats greatly aid their incorporation with other fatty food materials"

Failure of Action Against Physicians for Leaving an Instrument in the Abdomen

An action for damages against two physicians for negligence in leaving an instrument in the abdomen after operation has taken place Though the mistake is now well known, the circumstances were somewhat unusual The operation was performed for perforated gastric ulcer A large perforation was found Toward the end of the operation the anesthetist gave warning that the patient must be removed from the operating table at once Unless the wound was closed immediately, the patient would die The wound was promptly sewed up, saline solution was injected and the patient's life was saved If the operator had waited for the nurses to count the swabs and instruments, the man would have died The count revealed that one instrument was missing and this was duly reported Thirteen days later a second operation was done to remove the missing forceps They were easily removed and there was no sepsis, but the patient died His widow brought an action against the operator and his assistant The judge stopped the action against the assistant, as there was no evidence against him The jury found that the operator had not been negligent and therefore gave a verdict in his favor

The British Medical Association and the Remuneration of Medical Teachers, Laboratory Workers and Research Workers

The British Medical Association has been able to enforce a certain standard of remuneration for health officers and medical appointments by refusing to insert advertisements in its journal and in other ways when the salary offered is below what it prescribes This has not proved so simple in the case of nonprofessorial medical teachers and laboratory and research workers who are employed by medical schools An important conference on the subject has taken place between the science committee of the association and representatives of the medical schools Sir Robert Philip representing the University of Edinburgh, suggested that the association had perhaps restricted itself too sharply to the immediate financial interest of individuals The junior teachers attached to medical schools were from certain aspects a remarkably privileged class, their misfortune was in being attached to institutions with very limited resources They were in a sense apprentices or pupils, not so much officers as sons, and their remuneration might be considered rather from the point of view of the filial relation than that of the hireling The universities could not, like other public bodies, enlarge their resources by means of taxation They had as many posts as they could and rewarded them in such a manner as they could afford At Edinburgh many of these workers were on temporary engagements and regarded it as a privilege to serve for a time under the head of a department whose scientific eminence gave their experience an added value Many representatives of other medical schools endorsed these views It was generally agreed that the scales of salaries suitable for public appointments were not applicable to academic ones, that the association required more information with regard to the salaries of laboratory workers, and that it would be an advantage if salary was not mentioned in advertisements of academic appointments A resolution affirming the first part of this statement was unanimously carried but, as the powers of the science committee are limited, the matter will have to stand over for consideration by the representative body

PARIS

(From Our Regular Correspondent)

Feb 15, 1928

Sympathectomy in the Treatment of Megacolon

Resection of a megacolon constitutes a grave intervention Moreover, before long, constipation, alternating at times with diarrhea, will reappear Resection of the white rami communicantes of the first and second lumbar nerves allows a more regular intestinal contraction and diminishes the tonicity of the anal sphincter which also plays a part in maintaining the constipation Royle, Barthe and Tierry have employed the method several times with results that they declare were excellent

Diphtheria Anatoxin

Diphtheria anatoxin is coming to be widely used, especially since the Academy of Medicine has recommended preventive vaccinations on a large scale, owing to the recrudescence of diphtheria observed for some time But its use in some cases, has caused rather disquieting accidents some of which have nearly resulted fatally, and the public having been informed, has become somewhat distrustful, which is to be regretted, for this mode of immunization is efficacious Endeavors have been made to improve the quality of this vaccine the most common procedure being to mix diphtheria antitoxin with diphtheria toxin, which supplies a flocculate suitable for injection into the human being and animals With this product all accidents have been eliminated but M Zoeller and M Ramon recently demonstrated before the Societe de biologie that its immunizing potency is much lower than that of antitoxin when used alone

Efforts to Reduce Infant Mortality

M Mourier, director of public charities (l'Assistance publique) of Paris, has communicated to the Academy of Medicine the results of the efforts of his administration to reduce infant mortality, which was very high (from 30 to 40 per cent) during the period 1916-1920 In recent years, care-taking centers provided with visiting nurses have been created, where nurslings are cared for according to the most rigorous rules of hygiene However, it was found that many children—in fact, some of the strongest—died in spite of the best of care because they could not get used to their food, which consists of cow's milk sterilized by boiling To obviate this, the bureau of public charities (l Assistance publique) has created its St Anthony infants home where infants are gradually accustomed to the above-mentioned food of the care-taking centers The precaution has brought the mortality down to 9 22 per cent, which is appreciably lower than the general infant mortality for France, which is 12 per cent

An Original Protest Against Sunday Closing of Pharmacies

M Castille, a pharmacist of the Ternes quarter, who had refused to comply with the new regulation requiring pharmacists to close their places of business on Sunday, even though they dismiss their employees and serve the public themselves, found himself in the toils of the law For successive violations of the ordinance, 130 charges were brought against him, and the total penalties incurred had reached 20 000 francs ($800) by way of fines, together with a two months jail sentence He concluded then that it was best to bow to the authorities, but he decided also to make a very original form of protest Accordingly, the following Sunday, he opened his shop as usual but, instead of selling pharmaceutic products, he sold fruits and vegetables, of which he had provided an ample supply Fruit and vegetable shops have the right to remain open on Sunday M Castille thought to demonstrate in this original manner the grave injustice being done him in compelling him to close his shop, whereas food shops, b-shops and bars were allowed to remain open. His protest made a hit with the public, and to show their sympathy many hastened to buy his fruits and vegetables, but the pharmacists' employees' union, which was the promoter and the beneficiary of the peculiar closing order, organized a noisy indignation meeting in front of his shop, alleging that M. Castille was casting ridicule on the closing ordinance. The police had to be summoned to disperse the crowd, and the commissioner was obliged to admit that he could find no fault with the pharmacist-fruiterer, provided he paid the fruiterers' license. M. Castille is planning to continue his new venture the coming Sundays.

Preventive Measures in Bilharziasis

Bilharziasis, which is prevalent in Eygpt, has begun to spread among the French population of northern Africa. It has been recognized that the intermediate host of *Bilharzia* is a mollusk of the genus *Bullinus*, which is common in the ponds of the Mediterranean regions. MM. Brumpt and Werblunisky undertook experiments to secure evidence for this belief. They collected in Corsica, to which country bilharziasis has not yet penetrated, specimens of *Bullinus*, free from all infection, and cultivated them in reservoirs the water of which was kept at the average temperature found in Corsica. Into the reservoirs they passed the urine of soldiers affected with bilharziasis. After a few days, it was found that thirty out of thirty-five of the mollusks contained *Bilharzia*. They reached therefore, the conclusion that the parasite might easily develop in the seas where these specimens of *Bullinus* were collected, and that consequently it would be wise never to send to Corsica colonial African soldiers coming from regions in which urinary bilharziasis is endemic.

A Modern Hospital at Argenteuil

A hospital comprising seven buildings and capable of accommodating more than 200 patients is in process of construction at Argenteuil (Seine-et-Oise), on the site known as the "plateau de Perreux." The hospital will occupy an area of 40,000 square meters, though the buildings will cover a space of only 6,000 square meters. Its various services (maternity, general medicine, surgery, tuberculosis, contagious diseases, mental diseases) will occupy detached pavilions, some of which will be connected, however, by covered passages.

Infectious Endocarditis and the Premonitory Significance of Hippocratic Fingers

In a recent communication presented to the Societe medicale des hopitaux de Lyons, Gallavardin and Gravier of Lyons state that hippocratic fingers may indicate the existence of some deep and slowly developing infection not necessarily tuberculous in nature. Gallavardin mentions particularly infectious endocarditis. He states that, when hippocratic fingers are observed in a subject suffering from heart disease, sooner or later, possibly within the space of a few years, he will succumb to infectious endocarditis. Gallavardin cites a number of cases that he has followed for three years. He has never known the sign to fail. The necropsy has always shown lesions of endocarditis. Gravier, Chalier and Puig following this communication, substantiated the foregoing statements by citing their own observations.

The Period of Rest for Lying-In Women

A decree published in the *Journal officiel* modifies article 29 of the Code of Labor, which accords to a worker or employee twelve consecutive weeks of rest following her confinement. The new decree stipulates that the birth or prospective birth of a child cannot be utilized by the employer as a pretext for breaking a wage contract and for dismissal of the worker provided she has given the employer sufficient notice. The period of rest may be extended to fifteen weeks in case of difficult labor or in the event of complications arising. The dismissal of the worker by the employer during the allowed period of recuperation constitutes a cause of action against the employer for damages, for which suit the worker will not be required to pay costs. Any clause written into the wage contract in contravention of this stipulation is declared in advance null and void.

ITALY

(From Our Regular Correspondent)

Jan. 21, 1928

The Congress of Orthopedics

The Societa italiana di ortopedia held recently its eighteenth congress in Bologna, in the quarters of the Istituto Ortopedico Rizzoli.

THE TREATMENT OF BONE TUMORS

The main topic on the program, "The Treatment of Bone Tumors," was presented by Professor Putti and Dr. Camurati. The speakers emphasized that the chief problem is that of diagnosis. The factors involved are of a clinical, histologic and radiographic order. For early diagnosis the radiographic method is the most important. Of great clinical importance are the topography of the neoplasm and its course of development. Osteosarcomas simulate often inflammatory types or dystrophic processes. Operations performed in the Istituto Rizzoli have revealed only three cases of endothelioma, which have been described by Dr. Faldini. The osteosarcomas are distinctly malignant. The best therapeutic measure thus far is, when possible, early amputation of the limb. There is no great difference between the results from amputation and disarticulation, while resection is to be employed in the benign forms. Roentgenotherapy should follow amputation instead of preceding it. Benign tumors must always be extirpated early to prevent malignant metaplasia.

Dr. Possati of Bologna discussed roentgenotherapy of bone tumors, basing his statements on a personal series of thirty-two cases in which he had employed roentgen rays, since 1921. Of these thirty-two patients, five are still living and are in good health, after intervals of one, three and four years, respectively, from the beginning of treatment. All the patients derive immediate benefit from the treatment, and many had long periods of well being. According to the speaker, radiotherapy should be employed in all the cases that cannot be controlled by surgery, or when it is desired to combat the pain symptom, or as preparatory treatment in those cases in which the surgeon is not certain that he can destroy the tumor radically. Furthermore, postoperative irradiation is indicated when metastases appear. He has applied also, after the method reported by the Mayo Clinic, prophylactic irradiation of the lungs after operative interventions, but, as yet, his cases have been too few and too recent to express an opinion on the results. He has found that tumors in juveniles are more sensitive to roentgen rays than tumors in adults.

The main topic selected for the next congress is "The Etiology of Scoliosis," and Professor Lavermicona of Milan was chosen to present the official paper on the subject.

Reorganization of the Sanitary Services in Italy

The general management of the public health service has directed a circular letter to the prefects. The management stated that, in connection with the reorganization of the sanitary services, it had, in certain instances abolished the consultation centers and formed mergers of several neighboring communes, the main object being to reduce the expenses of the communes concerned. The prefects are therefore requested to prepare in similar cases, in cooperation with the provincial sanitary councils, an exact and objective evaluation of the present demands on the sanitary service, taking account not only of the number of indigent persons entitled to free medical assistance, but also of their topographic distribution. In the evaluation of the claims of candidates for appointment as medical directors of the mergers to be established, any previous service in the preexisting consultation centers must be considered.

A Home for Infants Born in Jail

In the women's department of the Milan jail, a home for infants born in the jail has recently been established.

An Auditory, Phonetic and Labiologic Reeducation Center

Dr. Urbano Melzi has established in Milan the first auditory, phonetic and labiologic reeducation center in Italy. Melzi proposes to follow in his institute the methods of Dr. Parrel of Paris, not only with regard to the reeducation of deafmutes and the selection of acoustic exercises for those with ear mutilations and suffering from acquired deafness, but also with reference to voice training, in various disturbances of the speaking and singing voice. Dr. Melzi will be aided by Professor Arpaia of the Institute for Deafmutes, Milan.

Abuses in the Practice of the Art of Healing

The statements of Professor Pestalozza, senator, with reference to the proposed law for the suppression of abuses in the practice of the art of healing have been furnished to the members of the senate. Pestalozza emphasizes the necessity of severe legislation, although it is likely that the law will have only a restrictive effect, since quackery is furthered by the ignorance of the public, which often prefers the empiric to the physician. It is practically impossible to bring about a diffusion of exact medical knowledge. He recommended to the senate that the law be approved, and advocated certain additions and modifications in order that the regulatory measures might better fulfil their purpose.

BERLIN

(From Our Regular Correspondent)

Feb. 18, 1928.

Lengthening of the Medical Course

Through a decree of the federal council, the medical course has been modified. Beginning with June 1, 1928, the premedical course will comprise five instead of four semesters, and the complete medical course will thus cover eleven in place of ten semesters. After that date, only students who have studied medicine for eleven semesters, at least five of which must have followed the passing of the premedical examination, will be admitted to the final medical examination. After eleven semesters medical study, the medical examination in accordance with the regulations of July 5, 1924, must be taken.

The Increase in Cancer and Heart Disease

The Federal Bureau of Health has just published the report of the Federal Bureau of Statistics on the vital statistics of the 350 communes of Germany with 15,000 or more population in 1926. The report covers about 27,000,000 inhabitants, or five twelfths of the population of the *reich*. In spite of the facts that there were about 7,000 more marriages in 1926 than in 1925, and that the total illegitimate births increased by around 9,000, the decrease in the total number of births was approximately 8,000. The mortality from tuberculosis continues to decline. In 1926, the total number of deaths from tuberculosis occurring in the 350 communes was 26,698, or a reduction of 8 per cent over the total for 1925 (28,711). On the other hand, there has been an increase in two other causes of death: cancer and heart disease. The number of deaths exceeds by far the number of deaths from tuberculosis. To give some comparative figures, of each 101.6 deaths, 9.9 were from tuberculosis, 11.8 from cancer and other malignant neoplasms, and 12.5 from heart disease.

A Peculiar Case of Violation of Professional Secrecy

Physicians, as well as members of certain other professions (judges, attorneys, the clergy, and the like), are, according to law, under obligations to preserve silence in regard to personal observations made in the course of their practice. In connection with a recent event, it has been brought out that the obligation of professional secrecy holds also with reference to the dead. A professor of pathologic anatomy mentioned in a lecture to students the name of the deceased person whose organs he was demonstrating for special reasons, and added that the cadaver was that of a criminal whose name had been frequently cited in the daily press. Through the daily press, the circumstance was brought to the attention of the Prussian minister of public instruction. In a decision that was likewise announced in the daily press, he designated the mentioning of the name of the deceased during the demonstration of the organs of the body as a violation of the obligation of professional secrecy and as a lack of good judgment.

The Causes of Death in Prussia in 1926

The Prussian Bureau of Statistics publishes the causes of death of the persons who died in Prussia in 1926. In Prussia, exclusive of the Saar region, the total number of deaths in 1926 and 1925 was 445,754 and 450,973, respectively, or 115.9 and 118.5, respectively, per 10,000 population. With a decrease of 5,219 deaths, the death rate for 1926 declined by 2.6 per 10,000 population, as compared with that of 1925. In 1925, the reduction in the total number of deaths, as against 1924, was 8,073, or 3.3 per 10,000 population, whereas, from 1923 to 1924, a reduction of 63,780 in the total number of deaths, or 13.7 per 10,000 population, had been recorded. Almost one fourth (22.9 per cent) of the deaths recorded in 1926 (102,269 or 26.6 per 10,000 population) resulted from transmissible diseases. The rate per 10,000 population for the remaining causes of death was as follows (the rates for 1925 being in parenthesis): diseases of the circulatory organs, 17.1 (17.1); senile weakness, 12.1 (12.1); cancer and other neoplasms, 11.2 (10.8); cerebral hemorrhage and other diseases of the nervous system, 9.6 (9.8); diseases of digestive organs, 9.0 (9.3); congenital lack of vitality and developmental defects, 6.8 (7.3); diseases of the respiratory organs, 4.5 (4.4); accidents or other violent forces, 3.8 (4.0); diseases of the urinary or genital organs, 3.0 (2.9); suicide, 2.5 (2.4); deaths in childbed, exclusive of childbed fever, 0.5 (0.5); murder and homicide, 0.2 (0.2); miscellaneous causes, 8.1 (8.7), and unmentioned or unknown causes, 0.6 (0.8).

Marriages

James G. Matthews, Spokane, Wash., to Miss Dorothy McCoy Simmons of Chicago, at Miami Beach, Fla., February 1.

Joseph Edgar Jensen, Momence, Ill., to Miss Aimee Louise Bigelow at Zewickley, Pa., February 22.

William White Falkener to Miss Eva Cruikshank, both of Newport News, Va., Dec. 31, 1927.

Lawrence Glen Dunlap to Miss Inez Irwin, both of Anaconda, Mont., January 28.

Frank Jensen to Miss Inger Engelsgjerd, both of Newman Grove, Neb., February 15.

Douglas B. Bell, Spokane, Wash., to Miss Ruth Lovern of Pueblo, Colo., January 10.

Charles C. Norris to Mrs. William J. Farr, both of Philadelphia, January 12.

Deaths

Lydia M De Witt, Chicago University of Michigan Medical School, Ann Arbor, 1898, associate professor emeritus, department of pathology, and a member of the Otho S A Sprague Memorial Institute, University of Chicago, assistant and instructor in medicine at her alma mater, 1898-1910 assistant city pathologist and bacteriologist, St Louis, 1910-1912, associate Fellow of the American Medical Association and a member of the American Association of Pathologists and Bacteriologists made contributions to the anatomy of the pancreas and the sinoventricular connecting system of the heart, and to the chemistry and chemotherapy of tuberculosis, aged 69, died March 10, at the home of her daughter in Winter, Texas, of chronic hypertension and arteriosclerosis

George Nicholas Acker II ⊕ Washington, D C , Columbia University College of Physicians and Surgeons 1914, clinical professor of medicine, George Washington University Medical School on the staffs of the Garfield Memorial, Emergency, Children s, Georgetown University and George Washington University hospitals, served during the World War aged 39, died, February 27, of heart disease and lobar pneumonia

Joseph B Barker, Piqua, Ohio, Eclectic Medical Institute, Cincinnati, 1881, member of the Ohio State Medical Association and the Associated Anesthetists of the United States and Canada, at one time secretary of the Miami County Medical Society , formerly on the staff of the Ball Memorial Hospital, aged 71, died February 16, of pneumonia

Dane H Bath, Oshkosh, Wis , Rush Medical College, Chicago, 1902, member of the State Medical Society of Wisconsin, and the Central States Pediatric Society, formerly on the staffs of St Mary s Hospital and Mercy Hospital where he died February 23, aged 50, of heart disease, following acute articular rheumatism

Richard Morrison Roach, Chicago, Jenner Medical College, Chicago, 1904, University of Illinois College of Medicine, Chicago 1906 member of the Illinois State Medical Society , on the staffs of the American and Illinois Masonic hospitals, aged 55, died, March 2 of acute dilatation of the heart and gastritis

Elmer D Williams, East Otto, N Y , University of Buffalo School of Medicine 1886, member of the Medical Society of the State of New York, formerly county coroner, for many years health officer of Mansfield and East Otto, aged 68 died in January of pneumonia

Edmond Albert Bazin ⊕ Haverhill, Mass , College of Physicians and Surgeons, Boston, 1905, formerly a druggist, on the staff of the Gale Hospital, aged 51, died, February 11, of pneumonia, following an infection of the lip

Richard H Satterlee ⊕ Buffalo, University of Buffalo School of Medicine 1888 member of the American Academy of Ophthalmology and Oto-Laryngology, aged 66 died, January 19, of myocarditis and lobar pneumonia

William Edward Ray ⊕ Allais, Ky , Eclectic Medical Institute Cincinnati, 1897, past president of the Perry County Medical Society member of the Hazard City school board, aged 56, died, February 19, of pneumonia

Robert Marion Andrews ⊕ Rochester, N Y , University of Buffalo School of Medicine 1898, served during the World War, on the staff of the Highland Hospital, aged 51, died, February 5, of chronic valvular heart disease

Frank Belville Adams, Detroit, University of Michigan Homeopathic Medical School, Ann Arbor, 1884, aged 73, died February 18 at St Joseph s Mercy Hospital, of myocarditis and hypertrophy of the prostate

Walter Preston Couch, Rose, Okla (licensed Oklahoma under the Act of 1908), aged 56, died, January 13, of carcinoma of the intestine

Robert William McInnes ⊕ Belvidere, Ill Chicago Medical College 1884, at one time mayor, formerly on the staffs of the Highland and St Joseph's hospitals, aged 70, died, February 25 of pneumonia

Allen Seaborn Hargrove, Lake Hamilton, Fla , Atlanta College of Physicians and Surgeons, 1906, served during the World War, aged 52, died February 11, of injuries received in an automobile accident

C Pruyn Stringfield ⊕ Sarasota, Fla , Chicago Medical College 1889 member of the Illinois State Medical Society aged 61 was killed, March 6 when he fell from the roof of a nine story building

John C Story, St Joseph, Mo , Eclectic Medical Institute Cincinnati, 1889, member of the Missouri State Medical Association, aged 64, died, February 11, of gangrene of the lung and influenza

Clayton William McClenahan, Cleveland, Starling Medical College, Columbus, 1902, aged 54, died, Dec 14, 1927, at Shelbyville, Ind , while en route to Phoenix, Ariz , of angina pectoris and asthma

Alfred D Bolton, Cleveland, Cleveland-Pulte Medical College, 1914, on the staff of the Euclid Hospital, aged 49, was accidentally electrocuted, February 6, by his own roentgen ray machine

Cyrus Brooks Harper, Coolville, Ohio, Kentucky School of Medicine, Louisville, 1893, member of the Ohio State Medical Association, aged 60, died, February 25, of cerebral hemorrhage

John N Jones, Washington, Ind , Rush Medical College, Chicago 1867, formerly a druggist, aged 81, died, February 25, at Miami, Fla , of an injury received in a fall

Alexander O Magill, Detroit, Western Reserve University School of Medicine Cleveland, 1881, aged 89 died, February 28, of pulmonary edema and chronic myocarditis

Charles Ernestus Phillips, Nyack, N Y , Medical Department of the University of the City of New York, 1885, aged 66, died, February 11, of cerebral arteriosclerosis

William Hector Park, Hawthorne, Fla , Bellevue Hospital Medical College, New York 1883, for many years a medical missionary in China, aged 69, died, Dec 5, 1927

Frank Bennet Adams, Baltimore, College of Physicians and Surgeons, Baltimore, 1877, aged 76, died, February 17, of carcinoma of the stomach, liver and intestine

John Wesley Coolidge, Los Angeles, University of Michigan Homeopathic Medical School, Ann Arbor, 1879, aged 74, died, February 15, of cerebral hemorrhage

Charles I McElroy ⊕ Coffeeville, Ala , Memphis (Tenn) Hospital Medical College, 1901, aged 48, died, Nov 24, 1927, of burns received when his home caught fire

William David Jones ⊕ Devils Lake N D , Chicago Medical College 1887 aged 67, on the staff of the Mercy Hospital where he died, February 18, of pneumonia

Charles Willis Evans, Oak Park Ill, Rush Medical College, Chicago, 1886, aged 65, died, February 28, at the West Suburban Hospital, of cerebral thrombosis

Louis William Rapp, New Britain, Conn , Tufts College Medical School, Boston, 1924, served during the World War, aged 29, died, January 25, of pneumonia

Edmond M Glessner, Denver, Missouri Medical College, St Louis, 1882, aged 66, was found dead in his office, Dec 15, 1927, of chronic myocarditis

Caroline Post Guyer, Kansas City, Mo Kansas City Homeopathic Medical College, 1897, aged 73, died, February 19, of myelogenous leukemia

William T Galbraith, Cleveland, Medical College of Ohio Cincinnati, 1876, aged 78 died, January 27, at the Charity Hospital, of diabetes mellitus

W F Odom, Kurten, Texas, University of Alabama School of Medicine, Tuscaloosa, 1894, aged 58, died suddenly, February 17, of angina pectoris

Charles Webster Hakes, Hillcrest N Y , Pulte Medical College, Cincinnati, 1888, also a clergyman, aged 70 died, February 14, of nephritis

Isaac M Smith, Muncie, Ind , American Eclectic Medical College, Cincinnati, 1878, aged 77, died, February 21, of cystitis and prostatitis

James J Hodges, Granby Mo Tennessee Medical College Knoxville, 1895 aged 66, died, January 26, of injuries received in a fall

Samuel Halsey Stevens, Utica N Y Long Island College Hospital, Brooklyn, 1888, aged 75, died, February 9, of cerebral hemorrhage

Graham Street, McAlester, Okla , Atlanta (Ga) College of Physicians and Surgeons, 1899, aged 66, died, January 16 of endocarditis

James K Bentley, Scranton, Pa , University of Buffalo School of Medicine, 1867, aged 82, died, February 11, of myocarditis

J R Reeves, Blanco Texas Southern Medical College, Atlanta, Ga , 1887 aged 80, died Dec 30, 1927, of senility

Adam C Albright, Danville Ill (licensed, Illinois, 1882), aged 69, died, February 29

Correspondence

"TRICHINOSIS WITH INVOLVEMENT OF THE CENTRAL NERVOUS SYSTEM"

To the Editor —I notice in THE JOURNAL, February 25, p 611, an article on "Trichinosis with Involvement of the Central Nervous System," by Joseph Salan, M D, and Benjamin Schwartz, M D, in which they state that "if the review is limited to the cases presenting neurologic manifestations one finds that very little has been written on the subject Even the discovery of the trichinae in the spinal fluid by Lintz in 1913, in the absence of accompanying neurologic symptoms, did not help to enrich the literature of cases of trichinosis in which the central nervous system was affected"

When I demonstrated for the first time the presence of *Trichina spiralis* in the cerebrospinal fluid of patients suffering from trichinosis I then stated that "in the first ten cases treated I found headache, loss of the patellar reflex, and sometimes also loss of the achilles tendon reflex, Kernig's sign was almost invariably present

"An additional symptom heretofore undescribed which was present from the beginning in both fatal cases was marked dilatation of the pupils"

All these symptoms are naturally caused by the involvement of the central nervous system and further research and publications justified these conclusions, as pointed out before (Van Cott, J M, and Lintz, William Trichinosis, THE JOURNAL, Feb 28, 1914, p 680 Lintz, William *M Rec* 90 987 [Dec. 2] 1916, Trichinosis and the Cerebrospinal Fluid, THE JOURNAL, June 10, 1916 p 1856)

Instead of neurologic manifestations being infrequent in trichinosis, there is rarely a case without involvement of the central nervous system, as I have been able to demonstrate *Trichina spiralis* in the spinal fluid in the great majority of the cases WILLIAM LINTZ, M D, Brooklyn

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed Every letter must contain the writer s name and address but these will be omitted on request

MERBAPHEN (NOVASUROL) AND OUABAIN

To the Editor —A woman with auricular fibrillation had a blood pressure of 180 and there was general edema A heart specialist suggested ouabain which he said is a derivative of strophanthin to be given in case the patient gets in extreme condition (which she seemed to me to be in) in quarter milligram doses with saline solution intravenously The family consulted another heart man who suggested novasurol 1 cc. intravenously This was given and the patient passed four or five times as much urine as she had been doing and appeared improved What I want to ask about is novasurol and ouabain Please tell me what you know about them EDWIN C MCMULLEN M D Pine Bluff Ark

ANSWER —Merbaphen and ouabain are both well described in New and Nonofficial Remedies Ouabain is a glucoside identical with the official strophanthin though the crystallized ouabain is somewhat more powerful Its action develops more rapidly and it is excreted more quickly, having less tendency to cumulative action than digitalis For intravenous or intramuscular injection, it is administered in doses of 0 0005 Gm (1/120 grain) not oftener than once a day

Merbaphen (introduced under the name Novasurol) is a complex organic mercury compound, the double salt of sodium mercurichlorphenyl-oxyacetate with diethylbarbituric acid (barbital), which was first introduced as an antisyphilitic, but was found to have such marked diuretic action that it came to be used in dropsy, most especially that due to heart disease It is injected intramuscularly or intravenously in doses of 0 75 cc of the 10 per cent solution for the first administration, which if well borne may be followed by doses of 1 and up to 2 cc of the solution once or twice a week

LIVERMEAL

To the Editor —I have a number of patients with pernicious anemia who are on the liver diet and are finding it difficult to take the daily amount prescribed either cooked or in cocktails I have literature of the Livermeal Corporation 420 Madison Avenue New York describing their products Phos Hepatic Extract and Livermeal which they claim is over 84 per cent beef liver substance scientifically treated 16 per cent of the preparation consists of nutriment in the form of malt preparations I am asking you if these products have been investigated and approved by the American Medical Association If these have not are there any that have been which I may prescribe which would make it easier for my patients to get the necessary amount of liver? Please omit name

B O C M D

ANSWER —No product of the Livermeal Corporation has been accepted for New and Nonofficial Remedies nor has the firm requested the Council on Pharmacy and Chemistry to consider any product

From the advertising in our files it would appear that the Livermeal Corporation is 'pushing' a shotgun proprietary "Matthews' Phos-Hepatic Extract" which is claimed to contain the "extractive principles" of fresh beef liver in "combination" with sodium glycerophosphate and "carefully selected carminatives and digestants' which, according to a circular letter, it is suggested, practitioners will find "a convenient base or vehicle for tonic prescriptions'

So far, the Council has accepted but one liver extract preparation Liver Extract No 343, manufactured by Eli Lilly & Co, Indianapolis, under the direction of the Committee on Pernicious Anemia of the Harvard Medical School (THE JOURNAL, February 4, p 385)

Some suggestions for the culinary exhibition of liver appeared in THE JOURNAL, Oct 15, 1927, p 1335, "Liver Diet in Anemia"

POSSIBILITY OF SPINA BIFIDA IN SECOND PREGNANCY

To the Editor —A short time ago my daughter gave birth to her first child which had spina bifida together with partial failure of development of the cranial bones The child lived three weeks The father and mother are both healthy and the Wassermann reaction is negative What are the probabilities in the event of future pregnancies? I have been advised by an obstetrician of considerable experience that he has never seen two cases of spina bifida in the same family Is this correct? Please omit name

M D Illinois

ANSWER —Because of the present state of knowledge regarding the causation of monsters, the question cannot be answered with any degree of positiveness Monsters are due to disease or irregularity in the formation of the germ and also to extraneous causes operating on the ovum in the early weeks of pregnancy inside and outside the uterus Several cases are on record in which a repetition of anencephaly occurred and in one case a spina bifida appeared in a subsequent pregnancy, but it is safe to say that in all probability such deformities will not recur It is important in these cases to search carefully for any disease of the uterus, of the cervix, of the adnexa and of the general system If such disease is found it should be carefully treated and rooted out if possible

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ARKANSAS Little Rock May 9 10 Sec Reg Bd Dr J W Walker Fayetteville. Sec Homeo Bd Dr A A Pringle Eureka Springs Sec Eclectic Bd Dr C E Laws 803½ Garrison Ave. Fort Smith

COLORADO Denver, April 3 Sec. Dr Philip Work 324 Metropolitan Bldg Denver

DISTRICT OF COLUMBIA Washington April 10 Sec Dr Edgar P Copeland Suite 110 1801 Eye St Washington

HAWAII Honolulu April 9 12 Sec Dr James A Morgan Room 48 Young Bldg Honolulu

IDAHO Boise April 3 Commissioner of Law Enforcement, Hon F E Lukens Boise

ILLINOIS Chicago April 10 12 Supt of Reg, Mr V C. Michels, Springfield

LOUISIANA New Orleans May 1 Sec Homeo Bd Dr F H Hardenstein 830 Canal St New Orleans

MINNESOTA Minneapolis April 17 19 Sec Reg Bd Dr A F Comstock 524 Lowry Bldg St Paul Basic Science examinations April 3 Sec Basic Science Bd Dr E T Bell U of Minnesota Minneapolis

MONTANA Helena April 3 5 Sec Dr S A Cooney Power Bldg Helena

NEBRASKA Omaha May 1 Sec Basic Science Bd Mr Lincoln Frost Lincoln

NEVADA Carson City May 7 9 Sec Dr Edw E Hamer Carson City

NEW MEXICO Santa Fe April 9 10 Sec Dr Wm T Joyner Roswell

RHODE ISLAND Providence April 5 6 Sec Dr B U Richards State House Providence

Book Notices

Pernicious Anemia By Beaumont S Cornell M B Cloth Price $4 Pp 311 Durham N C Duke University Press 1927

In this monograph the author gives a complete review of the literature After taking up the definition, classification and distribution of pernicious anemia, he gives in detail an historical outline of the disease Then there is an excellent discussion of the etiology and general symptomatology of the disease A systematic account of pernicious anemia in relation to various groups of organs follows The concluding chapters are on diagnosis, prognosis, prophylaxis and treatment An extensive bibliography and subject-author index is appended This work includes everything that has been done in the study of pernicious anemia up to the announcement of Minot and his collaborators of the finding of a liver fraction that possesses the same power to cause remissions that whole liver has Various high liver diets are given in some detail, and the work of both Koessler and Minot is discussed The general style of the book, its language and general make up is such that it can be read to advantage by those who have not had a medical training It has also real value to the physician because of its completeness and the soundness of the views presented and because of its bibliography

An Introduction to Clinical Perimetry By H M Traquair, M D F R C S Assistant Ophthalmic Surgeon Royal Infirmary Edinburgh Cloth Price $13 50 Pp 264 with 165 illustrations St Louis C V Mosby Company 1927

The author has divided the text into two parts, the first dealing with normal fields, instruments for taking the peripheral and central fields and the various methods of examination The final chapter in this part deals with the physiology of the visual field in relation to clinical perimetry The second part is given to applied perimetry In this portion he includes the pathologic field and interpretation of the changes in the visual fields There are separate chapters dealing with the choroid, retina, glaucoma, optic nerve, lesions of the chiasma, lesions above the chiasma and functional changes In the appendix there is a well written summary of the anatomic relations of the visual pathway, sheath of the optic nerve, blood supply of the visual nerve tract, uses of the perimeter and screen and tables of tangents and degrees for use with Bjerrum s screen The book is well written, has a logical arrangement of the material and is of practical use to the student and practitioner of ophthalmology It contains numerous sketches and examples, most of which are typical of the disease under discussion and will serve as a handy comparison for use in the office or clinic

Las secreciones internas de las glandulas sexuales El problema de la glandula de la pubertad Por Alexander Lipschutz professor de fisiologia y director del instituto de fisiologia de la Universidad de Concepcion (Chile) Un prefacio por F H A Marshall F R S Translated by F Martinez Nevot Second edition Cloth Pp 492 with 140 illustrations Madrid Javier Morata 1928

This is essentially the rendition into Spanish of the volume recently published in English by the prolific investigator Dr Lipschutz, who has now moved from Dorpat to Chile In addition to eleven chapters prepared by the author himself there is an introductory chapter on intersex from the clinical standpoint by Prof Iucio Maranon of Madrid Dr Lipschutz s own researches have touched most of the fields of physiology of the ovaries and testes, and he shows a good acquaintance with the extensive literature and a degree of critical judgment of this literature, so noteworthy because so rare in the field of the endocrinology of sex Each chapter is well illustrated by photographs and drawings both from the author's own work and from the researches of others At the end of each chapter is a list of the most important publications touching the subject under discussion Physicians and research biologists in the Spanish speaking countries will be well served with the rendition of this monograph into Spanish

Medicolegal

Injury to Person Requested to Ride in Ambulance

(Robertson et al v Holden (Texas), 297 S W R 327)

The Court of Civil Appeals of Texas holds that where the driver of an ambulance when on emergency calls has the right of way on the streets of a city by ordinances of the city, yet such right of way does not exempt him from the duty of using due care, or exempt from the consequences of any negligence for the failure to use due care The plaintiff in this case was injured when an ambulance overturned in which she had been requested by the driver to ride with her injured brother who was being taken to a hospital The defendants—owners of the ambulance—urged that there was neither allegation nor proof that the driver of the ambulance was acting within the scope of his authority in inviting the plaintiff to ride in the ambulance and in driving the ambulance But, in the absence of proof to the contrary, this court has the right to assume that the driver of the ambulance was acting within the scope of his authority in driving it on the occasion in question Furthermore, the court thinks that it is a matter of common knowledge, of which it may take judicial cognizance, that fast moving vehicles or ambulances, carrying badly injured people, require some one inside of the vehicle to steady the injured person, or the stretcher on which he is resting, and to prevent further injury to him There was nothing in the defendants' contention

The Tendency as to Facts Subject to Expert Testimony

(State v Cox (Minn) 215 N W R 189)

The Supreme Court of Minnesota, in affirming a judgment of conviction of the defendant of the crime of rape, says that the attention of a physician called as a medical expert was directed to the testimony of another physician and other evidence in the case, and, over the defendant's objection, he was permitted to testify that in his opinion sexual intercourse had not been voluntary on the part of the girl The defendant challenged the right of a medical expert to express such an opinion—claiming that it usurped the province of the jury The defendant contended that it was for the expert to describe the actual conditions and state what conditions might result from involuntary intercourse but, because there were other adequate causes which might produce the same conditions it was for the jury and not the expert, to determine whether the conditions were the result of rape There is authority to support this contention But, whatever may be the rule elsewhere, this court is not a follower of technicalities in procedure This court is also committed to the rule that the mere fact that the opinion of an expert covers the very issue which the jury has to pass on does not call for its exclusion

It is too fine a distinction in the ordinary case, to say that a witness may be asked whether certain conditions might result from certain causes but that he may not be asked whether, in his opinion, such causes produced such results The opinions of witnesses possessing peculiar learning or skill are admissible whenever the subject of the inquiry is such that a layman is unlikely to be able to form a correct judgment on it without such help The trial court has great discretion in the application of the rule as to the propriety of expert testimony This court regards it of greater importance to get the truth of the matter than to quibble over distinctions that are impracticable Perhaps it would have been better had the expert in this case stated his opinion merely to the effect that the conditions were such as would result from involuntary intercourse Obviously that was the controlling thought of the expert If the possibility of the condition being due to some other cause was apparent, it could easily have been shown on cross-examination Moreover, an expert witness who gives an opinion embracing an ultimate fact which the jury is to determine does not invade the province of the jury any more than an eye witness who testifies to a decisive fact The modern tendency is to make no distinction between evidential and ultimate facts subject to expert opinion

Society Proceedings

COMING MEETINGS

Alabama Medical Association of the State of Birmingham April 17 20 Dr D L Cannon, 519 Dexter Avenue Montgomery Secretary
American Association for Thoracic Surgery Washington D C April 30 May 2 Dr Ethan Flagg Butler Sayre Pa Secretary
American Association of Anatomists Ann Arbor Mich April 5 7 Dr Lewis H Weed Johns Hopkins Medical School Baltimore, Secretary
American Association of Genito Urinary Surgeons Washington D C April 30 May 2 Dr H L Kretschmer 122 S Michigan Avenue Chicago Secretary
American Association of Pathologists and Bacteriologists Washington D C May 1 2 Dr H T Karsner 2109 Adelbert Road Cleveland Secretary
American Bronchoscopic Society Washington D C April 30 Dr Louis H Clerf 128 South 10th Street Philadelphia Secretary
American Climatological and Clinical Association Washington D C May 1 2 Dr A K Stone Auburn Street Framingham Center Mass, Secretary
American Dermatological Association Washington D C April 30 May 2 Dr C Guy Lane, 416 Marlborough Street Boston Secretary
American Gastro-Enterological Association Washington D C April 30 May 1 Dr W J Mallory, 1720 Connecticut Avenue N W Washington D C Secretary
American Gynecological Society Washington D C April 30 May 2 Dr Floyd E. Keene Medical Arts Building Philadelphia Secretary
American Laryngological Association Washington D C May 1 3 Dr G M Coates 1721 Pine Street Philadelphia Secretary
American Laryngological Rhinological and Otological Society Washington D C May 3 5 Dr R L Loughran 33 East 63d Street New York Secretary
American Neurological Association Washington D C May 1 3 Dr Henry A Riley 870 Madison Avenue New York Secretary
American Ophthalmological Society Washington D C April 30 May 2 Dr Emory Hill Professional Building Richmond Va Secretary
American Otological Society Washington D C April 30 May 1 Dr T J Harris 104 East 40th Street New York Secretary
American Pediatric Society, Washington D C April 30 May 2 Dr H C Carpenter 1805 Spruce Street, Philadelphia Secretary
American Pharmacological Society Ann Arbor Mich April 12 14 Dr E D Brown, University of Minnesota Minneapolis Secretary
American Physiological Society Ann Arbor Mich. April 12 14 Dr W J Meek Science Hall University of Wisconsin Madison Secretary
American Society of Biological Chemistry Ann Arbor Mich April 12 14 Dr D W Wilson University of Pennsylvania Medical School, Philadelphia Secretary
American Society of Clinical Investigation Washington D C April 30 Dr J T Wearn Boston City Hospital Boston Secretary
American Society of Tropical Medicine Washington D C May 1 2 Dr Benjamin Schwartz, P O Box 131 Pennsylvania Avenue Station Washington D C., Secretary
American Surgical Association Washington D C April 30 May 2 Dr Lincoln Davis 205 Beacon Street Boston Secretary
Arizona State Medical Association Tucson April 19 21 Dr D F Harbridge Goodrich Building Phoenix Secretary
Arkansas Medical Society El Dorado May 1 3 Dr W R Bathurst 810 Boyle Building Little Rock Secretary
Association of American Physicians Washington D C May 1 3 Dr J H Means Massachusetts General Hospital Boston Secretary
California Medical Association Sacramento April 30 May 3 Dr Emma W Pope 593 Market Street San Francisco Secretary
Congress of Physicians and Surgeons of North America Washington D C, May 1 2 Dr W R Steiner 646 Asylum Avenue Hartford Conn Secretary
Federation of American Societies for Experimental Biology Ann Arbor, Mich April 12 14 Dr E D Brown University of Minnesota, Minneapolis Secretary
Florida Medical Association Tampa April 3-4 Dr Shaler Richardson, 111 West Adams Street Jacksonville Secretary
Georgia Medical Association of Savannah May 9 11 Dr A. H Bunce 139 Forrest Avenue N E Atlanta Secretary
Illinois State Medical Society Chicago May 8 11 Dr Harold M Camp Lahl Building Monmouth Secretary
Iowa State Medical Society Cedar Rapids May 9 11 Dr Tom B Throckmorton Bankers Trust Building Des Moines Secretary
Kansas Medical Society Wichita May 8 10 Dr J F Hassig 804 Huron Building Kansas City Secretary
Louisiana State Medical Society Baton Rouge April 10 12 Dr P T Talbot 1551 Canal Street, New Orleans Secretary
Maryland Medical and Chirurgical Faculty of Baltimore April 24 26 Dr John T King Jr 1211 Cathedral Street Baltimore Secretary
Mississippi State Medical Association Meridian May 8 10 Dr T M Dye Clarksdale Secretary
Missouri State Medical Association Columbia May 14 17 Dr E. J Goodwin 634 N Grand Boulevard St Louis, Secretary
Nebraska State Medical Association Hastings May 15 17 Dr R B Adams Center McKinley Building Lincoln Secretary
New Hampshire Medical Society Manchester May 15 16 Dr D E Sullivan 7 North State Street Concord Secretary
New Mexico Medical Society Albuquerque May 10 11 Dr L B Cohenour 219 West Central Avenue Albuquerque Secretary
North Carolina Medical Society of the State of, Pinehurst April 30 May 2 Dr L B McBrayer Southern Pines Secretary
Ohio State Medical Association Cincinnati May 1 3 Mr Don K Martin 131 East State Street, Columbus Executive Secretary
Oklahoma State Medical Association Tulsa May 17 19 Dr C A Thompson 609 Barnes Building Muskogee Secretary
Pacific Coast Oto Ophthalmological Society Santa Barbara April 18 20 Dr Walter F Hoffman 817 Summit Avenue Seattle Secretary
South Carolina Medical Association Columbia April 17 19 Dr E A Hines Seneca Secretary
Tennessee State Medical Association, Nashville April 10 12 Dr H H Shoulders Lambuth Building Nashville Secretary
Texas State Medical Association of Galveston May 8 10 Dr Holman Taylor Medical Arts Building Fort Worth Secretary

Current Medical Literature

AMERICAN

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Titles marked with an asterisk (*) are abstracted below

Annals of Internal Medicine, Ann Arbor, Mich

1 463 533 (Jan) 1928

*Regeneration of Tubular Epithelium in Human Kidney Following Injury by Mercuric Chloride. W C Hunter Portland —p 463
*Study of 22 808 Blood Sugar Estimations—Fasting and Postprandial—in Nondiabetic Individuals H J John Cleveland —p 470
Tuberculosis of Gallbladder Case J T Case, Battle Creek Mich —p 482
*O Iodoxybenzoic Acid in Treatment of Infectious Arthritis Eighty Additional Cases. J B Youmans Nashville Tenn —p 494
*Histopathology of Tonsil in Acute Rheumatic Fever and Chorea W W G MacLachlan and de W G Richey Pittsburgh —p 506
*Uncomplicated Exudative Synovitis Two Cases E C Robichaux Excelsior Springs Mo —p 513

Mercuric Chloride Poisoning with Regeneration of Kidney Epithelium—An instance of mercuric chloride poisoning in man is presented by Hunter in which the kidney exhibited almost complete regeneration of the tubular epithelium within fourteen days after injury The microscopic appearance of the kidney is strikingly similar to that observed in experimental animals at the same interval of time after mercuric chloride poisoning The regenerated epithelium differs markedly from the normal in its histologic and staining characteristics, thus facilitating easy and certain recognition Microscopic proof of healing and clinical evidence of increasing function indicate that the kidney was recovering from the effects of the poison Death was due in large measure to the intestinal lesions of mercury and terminal bronchopneumonia rather than to renal insufficiency

Blood Sugar of Nondiabetic Patients—An analysis of the 22,808 blood sugar estimations made from the blood of nondiabetic individuals is presented by John The blood sugar in each instance has been analyzed as to its height in relation to the length of the postprandial period The range for normal blood sugar as usually given is from 80 to 180 mg per hundred cubic centimeters, but the present analysis shows that in 2 452 of these estimations the blood sugar is 80 or below, and that in 1,791 it was 75 mg per hundred cubic centimeters or below, the lowest value being 30 mg per hundred cubic centimeters Such a high percentage of blood sugar values below 80 mg per hundred cubic centimeters would indicate that these low blood sugar values are not of rare occurrence. Furthermore, that they are apparently normal for these individuals is indicated by the fact that no special complaint is noted in the histories of the cases especially investigated

O-Iodoxybenzoic Acid in Infectious Arthritis—Of eighty patients with infectious arthritis treated with o-iodoxybenzoic acid, nearly three fourths were markedly or moderately improved, the remainder showed little or no improvement No serious untoward effects were noted Further evidence is given by Youmans that o-iodoxybenzoic acid is of value in the treatment of infectious arthritis, and in his opinion the results obtained by its use under comparable circumstances are superior to those obtained with other forms of medical treatment It is believed that a continued and more extended trial of the drug is warranted in order that its ultimate value may be ascertained

Histopathology of Tonsils in Rheumatic Fever and Chorea—In eighteen cases of rheumatic fever and five of chorea a study of the capsular and pericapsular tissues of the tonsil showed perivascular lesions consisting of lymphoid and plasma cells in fourteen of the former and four of the latter In addition to this, atrophic muscle giant cells, fibrosis, bone and cartilage, and foreign-body giant cells in various parts of the tonsil were encountered An endothelial proliferative reaction of the lining cells of the capillaries and perivascular lymph spaces was noted in eleven cases Some of the endothelial cells were multinucleated and were associated with granulomatous-like lesions in six instances The endothelial cell response was the principal feature in this study Maclachlan and Richey are not prepared at this time to state that it is a specific reaction in the tonsil for rheumatic fever or chorea

Mono-Articular Exudative Synovitis—Robichaux reports two cases of mono-articular exudative synovitis of obscure etiology One is the so called intermittent hydrops, of which only forty-three uncomplicated cases appear in the literature There were three main attacks of this mysterious phenomenon in six years and the interesting feature of them is that each subdivisional attack retained, throughout, its original uncanny calendar like cycle of progression and retrogression The efficacy of arsenical preparations is demonstrated by its successful use in each attack Record is made of the employment of arsphenamine in this case with almost immediate result Robichaux also reports a case of an uncomplicated mono-articular exudative synovitis of undetermined etiology, with the evidence pointing to the gastro-intestinal tract

Archives of Surgery, Chicago

16 451 630 (Feb) 1928

Management of Craniocerebral Injuries R D McClure and A S Crawford Detroit —p 451
*Arteriovenous Aneurysm J deJ Pemberton Rochester Minn —p 469
*Foreign Bodies in Stomach S G Chalk and H O Foucar, London, Ont —p 494
*Obstructive Massive Atelectasis of Lung P N Coryllos and G L Birnbaum New York —p 501
*Kohler s Disease L W Ely San Francisco —p 560
Torsion of Omentum Without Hernia Two Cases G L McWhorter Chicago —p 569
Adenomyoma of Stomach J H Woolsey and R J Millzner San Francisco —p 583
Experimental Chronic Duodenal Obstruction Changes in Blood and Other Pathologic Changes B N Berg and J W Jobling New York —p 593
*Intestinal Obstruction I Comparison of Toxicity of Normal and Obstructed Intestinal Content O W Wangensteen and S S Chunn Minneapolis —p 606
Thirty Fourth Report of Progress in Orthopedic Surgery P D Wilson Boston, and Others —p 615

Management of Craniocerebral Injuries—In the management of cases of injuries of the head, stress is laid by McClure and Crawford on (1) the importance of accurate detailed history , (2) careful repeated examinations , (3) constant skilful nursing (4) the taking of roentgenograms in all cases (5) spinal punctures for diagnosis in all doubtful cases when the patient is not in a state of shock and when block does not occur at the base of the cerebrum, and treatment with hypertonics to reduce cerebral compression , (6) properly timed surgical intervention for accessible hemorrhage compound and depressed fractures, and (7) insistence on keeping the patients quiet for a sufficient length of time and a gradual resumption of duties after recovery

Arteriovenous Aneurysm—Pemberton analyzes forty-one cases of arterial and arteriovenous aneurysm in which operation was performed Twenty five of these were arteriovenous , sixteen were acquired, and nine were congenital

Thousands of Foreign Bodies in Stomach—Chalk and Foucar report the case of a woman, aged 42 with manic-depressive insanity, who in the course of about a year swallowed 2,533 foreign bodies consisting of pieces of hair pins, safety pins, glass bent wire, tacks, nails and buttons The mass was removed by operation It weighed 410 Gm and nearly filled a pint sealer The patient made an uneventful recovery

Obstructive Massive Atelectasis of Lung—When simple methods, such as shaking or changing the position of the patient, are not quickly successful, Coryllos and Birnbaum state that the obstructing agent must be removed by bronchoscopy with aspiration or extraction in order to hasten recovery and to avoid further septic complications, such as bronchopneumonia pneumonia or abscess Artificial pneumothorax as advocated by Elliot and Dingley, may be a palliative but is not a therapeutic measure

Kohler's Disease—Six cases, those of five boys and one girl, ranging in age between 4 and 6½ years, are reported by Ely In all but one case the roentgenogram was so characteristic that the diagnosis could be made without difficulty , in that case the diagnosis was uncertain and the condition cleared up spontaneously There was correspondence between the clinical picture and the roentgen-ray observations in only one case The clinical picture was that of a mild injury or infection , the roentgen-ray picture, that of great "damage" to the bone The finding of marked abnormality by roentgen rays in an apparently normal foot shows that the "disease" may exist without causing any symptoms or physical signs Kohler's disease is a developmental anomaly of the tarsal navicular bone accompanied by symptoms Patients with this disease always recover spontaneously The patient should be treated symptomatically

Toxicity of Intestinal Contents—Wangensteen and Chunn assert that all intestinal contents are toxic on injection The intestinal contents of the normal dog and rabbit elicit the same symptoms on injection as do the contents of the obstructed bowel, and they are just as toxic In the dog with intestinal obstruction, the intestinal contents from below the point of obstruction appear even more toxic on injection than the fluid obtained from above the obstructing mechanism

Colorado Medicine, Denver

25 43 72 (Feb) 1928

Rocky Mountain Spotted Fever Case C S Gydesen Colorado Springs —p 46
Importance of Early Differential Diagnosis of Venereal Ulcer Sixty Cases G M Myers Pueblo —p 51
Surgical Treatment of Spinal Tuberculosis R G Packard Denver —p 55
*Basal Metabolism in Pulmonary Tuberculosis L W Frank and L R Safarik, Denver —p 61

Basal Metabolism in Pulmonary Tuberculosis—A study made by Frank and Safarik of the basal metabolism in 128 unselected sanatorium cases of pulmonary tuberculosis and a group of twenty normal persons showed that under basal conditions the rate falls within the generally accepted normal limits The test is of some value in differentiating early tuberculosis, hyperthyroidism and various neuroses

Illinois Medical Journal, Oak Park

53 77 152 (Feb) 1928

Roentgen Ray Diagnosis of Cancer of Esophagus P M Hickey, Ann Arbor Mich —p 97
Iridotasis Operation for Glaucoma (Some Deductions After Eight Years) M Goldenburg Chicago —p 101
Relations of State Child Hygiene Program to Practitioner of Medicine G S Wightman Springfield —p 103
Four Common Misapprehensions Regarding Endocrines and Endocrinologists J H Hutton Chicao —p 108
Intra Ocular Hypertension Relieved by Removal of Focal and Systemic Infections C W Geiger and J H Roth Kankakee —p 110
*Prevention of Measles Use of Tunnicliff s Immune Goat Serum A L Hoyne Chicago —p 114
Roentgenologic Aspects of Lithopedion B R Kirklin and H E Simon Rochester Minn —p 119
Newer Phases of Nephritis and Its Treatment J Meyer Chicago —p 122
Nonoperative Treatment of Glaucoma H Gradle Chicago —p 126
Otitis Media in Infancy G M Cline Bloomington Ill —p 130
Position of Ophthalmologist in Medical Profession R H Buck Chicago —p 136
General Care of Patient Having Bone and Joint Tuberculosis B Goldberg Chicago —p 140
Where is the Family Doctor and What is the Matter with the Public? S J McNeill Chicago —p 145

Prevention of Measles—Hoyne s experience leads him to conclude that Tunnicliff's immune goat serum appears to be a reliable measles prophylactic if given within three days of exposure If given later, it is likely to modify an attack of measles should the latter develop Although serum rashes have developed in 13 per cent of some of the immunized groups, no serious reactions have been observed Regardless of physical condition there is no contraindication to the use of immune goat serum The serum should be given intramuscularly in 5 cc doses, as a rule If more than three days has elapsed since exposure, the dose should be doubled The chief value of immune goat serum is for checking epidemics of measles, particularly in hospitals and institutions It does not confer a permanent immunity The great advantage of immune goat serum over human convalescent serum is due to the ultimate possibility of its general availability

New Orleans Medical and Surgical Journal

80 483 544 (Feb) 1928

Rudolph Matas A E. Fossier New Orleans and Others —p 483
Management of Patients with Anorectal Fistula W E Sistrunk, Rochester Minn —p 515
Injuries of Orbital Portion of Optic Nerve D H Anthony Memphis Tenn —p 519
Case of Tularemia B Goldsmith Lake Charles La —p 526

Physical Therapeutics, Baltimore

46 1 58 (Jan) 1928

Physiologic Effects of Heat W T Johnson Philadelphia —p 1
Educational Courses in Physical Therapy A B Hirsh New York —p 5
Gonorrhea in Male W Bierman New York —p 15
Surgical Diathermy in Gynecology A D Willmoth Louisville Ky —p 25
Gonorrhea in Women Treatment by Diathermy W S Pugh New York —p 32
Excision of Prostatic Bar by Cutting Current C. W Collings, New York —p 41.

Public Health Journal, Toronto

19 1 50 (Jan) 1928

Mental Hygiene Movement J W Bridges Montreal —p 1
Forest Schools as Adjunct to School Health F S Burke Toronto —p 9
Gordon Bell Memorial Lecture on Food Poisoning E O Jordan Chicago.—p 20
Substructure of Public Health L A Thornton Regina Sask —p 32

Public Health Reports, Washington, D C

43 111 167 (Jan 20) 1928

*Resurvey of Endemic Thyroid Enlargement in Cincinnati. R. Olesen —p 113

43 169 257 (Jan 27) 1928

Experimental Black Tongue of Dogs Relation to Pellagra J Goldberger and G A Wheeler —p 172

Thyroid Enlargement in Cincinnati—A resurvey of endemic thyroid enlargement in Cincinnati, in 1927, three years after the original thyroid survey, Olesen says, showed a lessened incidence of the disease and a considerable reduction in the number of goiters of moderate and marked degree The aggregate incidence of endemic goiter in 1927 was only slightly less than in 1924, but the age incidence was distinctly less in 1927 While iodized table salt was the chief prophylactic recommended and used, it is known that other iodine-containing preparations were also used It may be surmised that iodized salt was a factor in the slight reduction of goiter revealed by the 1927 survey There was a notable decrease in the thyroid enlargements of considerable size noted in 1924 and again in 1927 This was due largely to efficient treatment instituted by physicians at the instigation of parents It is possible that iodized salt and other prophylactics may also have exerted a favorable influence

Rhode Island Medical Journal, Providence

11 17 34 (Feb) 1928

Sanitation of Summer Camps E W Campbell Augusta Me —p 17

South Carolina M Association Journal, Greenville

24 1 24 (Jan) 1928

Acute Abdomen" in Infancy and Childhood I H Grimball Greenville —p 3
So Called Nasal Catarrh T A Quattlebaum Columbia —p 7
Fractures Treatment W A Boyd Columbia —p 11

Southwestern Medicine, Phoenix, Ariz

12 1-44 (Jan) 1928

Genito-Urinary Tuberculosis F Hinman San Francisco —p 1
Fractures of Skull R J Stroud Tempe, Ariz —p 6.
Fractures of Ribs S I Bloomhardt Phoenix —p 8
Case of Lung Abscess F P Miller El Paso Texas —p 16
Case of Bronchiectasis A D Long El Paso Texas —p 17
Sacral Anesthesia in Proctologic and Urologic Surgery E J Kilfoy, Los Angeles —p 18

West Virginia Medical Journal, Huntington

24 53 104 (Feb) 1928

Office Treatment of Gynecologic Patients W T Dannreuther New York —p 53
Our Tuberculosis Sanatoriums J G Pettit Hopemont —p 61
Differential Diagnosis of Pulmonary Diseases C. Robertson, Salem Va. —p 64
Review of 626 Obstetric Cases M A Moore Kingston —p 66
Foreign Bodies in Stomach F V Langfitt Clarksburg —p 79
Extra Uterine Pregnancy C B Pride Morgantown —p 82
Some Oral Conditions Relation to Our Specialty C B Rohr Alum Bridge Va —p 83

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below Single case reports and trials of new drugs are usually omitted

British Medical Journal, London

1 121 164 (Jan 28) 1928

Treatment of Urinary Sepsis R J Willan —p 121
*Inoperable Sarcomas Treated with Radium R Ward —p 123
*Metabolism and Acidity of Fetal Tissues and Fluids W B Bell et al —p 126
*Hereditary Icterus or Familial Acholuric Jaundice J S Manson —p 131
*Action of Colloidal Lead and Radiation on Tumors J C Mottram —p 132
*Method of Dealing with Swallowed Object S G Scott —p 133
*Total Hepatoptosis A A Forty —p 133
Ruptured Ectopic Gestation Occurring on Both Sides E G Collins —p 134

Radium Therapy of Inoperable Sarcoma.—Ward reports on thirty cases of inoperable sarcoma treated with radium One patient has been well fourteen years and one nine years after the treatment Four have been well for from four to six years

Metabolism and Acidity of Fetal Tissues—Bell et al present further evidence in support of their belief that the chorionic epithelium behaves functionally like a malignant neoplasm Their researches have shown that the p_H value is on the acid side as compared with normal tissues, and that the acidity is greatest in the earlier periods of pregnancy This tissue, like cancerous neoplasms, has the power of aerobic glycolysis with the production of lactic acid It has been suggested by Bierich that the infiltrating properties of malignant disease are due to the presence of lactic acid If this is so, the same explanation probably obtains in regard to the invasive power of the syncytium A high lactic acid concentration associated with a low dextrose content has been found in the fetal blood, and a reduction n the p_H together with a diminution in the alkali reserve, has been demonstrated Certain fetal somatic tissues have been examined and have been shown to be acid in regard to their p_H value. The amniotic fluid has a low p_H, and this is not entirely related to the lactic acid content There does not appear to be any deficiency in oxygen consumption so far as the fetus is concerned The connection between these observations and the pathologic states of the fetus and mother (toxemias) has not yet been determined

Hereditary Icterus—Manson reports six cases of an abnormal yellowing of the skin which has been transmitted through four generations numbering ten persons This yellowing is due to an abnormal increase of bilirubin in the blood serum arising from the destruction of abnormally fragile red corpuscles Manson prefers the title "hereditary icterus" to the alternative "familial acholuric jaundice," for there was no splenic enlargement, and the jaundice does not affect either the duration or the enjoyment of life The skin and conjunctivae showed a distinct icteric tinge. The feces were normal and the urine was free from bile.

Action of Colloidal Lead and Radiation on Tumors—There is evidence that the inoculation of colloidal lead into the circulation gives rise to thrombosis of the blood vessels of tumors Radiation also causes interference with the blood supply and thrombosis, apart from its direct destructive action on tumor cells Experiments have therefore been carried out by Mottram to determine whether, by combining these two therapeutic measures, tumors can be made to disappear by such doses that the toxic effects of lead on the patient would be avoided, and likewise the destructive action of radiation on normal tissues and its other harmful effects The results support the view that this combination of treatment should be given a trial in the case of patients suffering from cancer

Method of Dealing with a Swallowed Object.—A boy swallowed a key By radioscopic palpation and manipulation through the abdominal wall, Scott maneuvered the key thr the pylorus As the handle of the key was directed toward the pylorus, a complete turning round was necessary With careful manipulation, the wards of the key were made to engage in the pylorus However, the ring and metal disk, could not be induced to pass The lad was then told to go out and eat as big a lunch as he could without any fluids At the second examination, some three hours later, the key could be seen in the small intestine A dose of castor oil was ordered, and the key was safely delivered the next day per vias naturales

Total Hepatoptosis—Besides having a ptosed liver which occupied the right flank, and extended 2 inches below the umbilicus, Forty's patient also had curvature of the spine, a condition which is occasionally associated with hepatoptosis, and an enlarged thyroid gland The only physical sign arising therefrom appeared to be edema of the feet and legs The liver was in a position of anteversion with slight rotation to the right

Quarterly Journal of Medicine, London

21 187 358 (Jan) 1928

*Aneurysmal Dilatation of Left Auricle J C Bramwell and J B Duguid —p 187
Does Insulin Improve Carbohydrate Tolerance in Diabetes? I M Rabinowitch —p 211
Goiter in English School Child P Stocks —p 223
*Circulation Rate in Some Pathologic States Effect of Digitalis J G Kininmonth —p 277
Blood Cholesterol in Nephritis J Maxwell —p 297
*Obesity M W Goldblatt J F Smith and H G Hill —p 325
Study of Protective Action of Serum Against Hemolysin in Cases of Diphtheria J Gordon and J Science —p 345

Aneurysmal Dilatation of Left Auricle—Two cases of old-standing rheumatic carditis with extreme dilatation of the left auricle are reported by Bramwell and Duguid A brief summary is given of other similar cases, some of which have already been reported in the literature The mechanism of production of this peculiar lesion is discussed The evidence suggests that the condition cannot be accounted for either by pericardial adhesions or by any associated lesion of the mitral valve but that it is due to a chronic ischemic fibrosis of the auricular wall and is therefore analogous to aneurysm of the ventricle The exercise tolerance in many cases remains surprisingly good, in view of the advanced nature of the structural lesion It is suggested that this can be explained by the fact that the brunt of the injury is borne by the auricle, whereas the muscle of the ventricle remains relatively healthy, and indeed often exhibits considerable hypertrophy

Circulation Rate in Cardiac Lesions—One hundred and sixty-three determinations of the circulation rate were made by Kininmonth by the ethyl iodide method on twenty-four patients suffering from various cardiac lesions, from anemia, from myxedema and from exophthalmic goiter Of valvular lesions, aortic incompetence and early mitral stenosis do not directly affect the circulation rate In a case of pulsus bigeminus resulting from digitalis the bigeminal rhythm did not affect the cardiac output In complete heart block the output at each beat is large In cardiac failure the circulation rate is low this being due in ordinary types to a failure of the myocardium to maintain a sufficient output per beat, with, in cases of auricular fibrillation, rapid irregular tachycardia a possible contributory factor The circulation rate may be increased, decreased or unaffected by digitalis, different effects occurring not only in different patients but also in the same patients at different times An increase appears most likely to occur when there are signs of cardiac insufficiency and a low circulation rate, but in such cases does not invariably occur When signs of failure are absent or little marked and the circulation rate is not definitely low, an increase is less likely the circulation rate usually remaining unaltered or decreasing In cases of anemia no definite changes in circulation rate attributable to the anemia were observed In exophthalmic goiter the circulation rate tends to be high and in myxedema low A high degree of correlation appears to exist between circulation rate and oxygen absorption

Carbohydrate Metabolism in Obesity—Goldblatt et al have investigated a large number of cases of obesity as to their carbohydrate metabolism, using the method of the blood-sugar curve and the respiratory exchange The only distinction from the point of view of carbohydrate metabolism which can be drawn between cases grouped clinically and etiologically as exogenous and endogenous is that, in the early stages of the endogenous, there exists a markedly increased carbohydrate tolerance, as regards both storage and oxidation, which does not exist in the exogenous In the intermediate and later stages of both varieties, no clear differentiation can be drawn between their metabolism of carbohydrate, though it would seem that in the late stages of endogenous obesity there is a tendency toward a more extreme intolerance to carbohydrate, with an approach to a picture that may resemble diabetes

Presse Medicale, Paris

36 49 64 (Jan 14) 1928

*Splenectomy in Myeloid Leukemia P Lecene and C Aubertin —p 49
Pathogenesis of Intestinal Hemorrhages in Typhoid J Catsaras —p 51

Splenectomy in Myeloid Leukemia—The case reported by Lecene and Aubertin was that of a woman, aged 64 years Before operation she was given fifteen treatments with radiotherapy which brought the leukocytes down from 133,800 to 80,000 and the percentage of myelocytes from 21 5 to 18 At the same time, the erythrocytes had increased from 1,700 000 to 2,730 000 The patient recovered from the splenectomy in spite of the size of the spleen and the leukemic condition of the blood, and was in good health fifteen months later Splenectomy does not modify the evolution of the disease, and therefore is not superior in its effects to irradiation, since the latter brings the blood formula to normal for a longer or shorter period, while after splenectomy the blood formula remains qualitatively leukemic

36 65 80 (Jan 18) 1928

Etiology of Infectious, Contagious and Epidemic Polymorphous Erythema C Levaditi —p 65
*Water Elimination by the Skin J Meyer —p 66
Malaria Therapy Early in Syphilitic Meningitis J Mouzon —p 69

Water Elimination by the Skin—Because of the difficulty of procuring scales delicate enough for weighing adults in the determination of hourly water elimination, Meyer weighs the patients at twenty-four hour intervals He also weighs the food, urine and stools, and by subtraction, obtains the amount of perspiration In fever he found perspiration to be the most active agent in dehydration In nutritional diseases, perspiration runs parallel to basal metabolism In water retention, perspiration is as important a factor as diuresis In eczema, the two eliminating processes are usually parallel, with one of them predominating and with great daily variations In cardiac edemas, the amount of perspiration, whatever the amount of diuresis may be, remains high In certain cases of edematous and albuminuric nephritis, diuresis is variable, while perspiration is constant and so meagre in amount that it raises the question of extrarenal phenomena in this disease

Revue Française de Gynecologie et d'Obst, Paris

22 647 690 (Dec) 1927

Study of Hemangioma of Ovary R Keller —p 647
*Treatment of Sterility of Cervical Origin J L Audebert —p 660
*Subcutaneous Emphysema During Labor T Popoviciu and H Tanasesco —p 665

Treatment of Sterility of Cervical Origin by Intra-Uterine Stem Pessary—The indications and contraindications for the use of the intra-uterine stem pessary are outlined by Audebert The instrument is the stem pessary of Pettit with a special modification suggested by Courtin It is left in place for three months The author treated forty-three patients by this method, fifteen of whom he did not see after removal of the pessary In all but three cases, the pessary was well borne Fifteen of twenty-eight cases of dysmenorrhea were cured, nine, improved, four, unaffected After removal of the pessary, the cervical canal remains permeable and anteflexion is nearly always corrected The treatment was followed by pregnancy in thirteen of the twenty-eight cases One of these resulted in an abortion, in the rest, pregnancy went to term

Subcutaneous Emphysema During Labor — The case reported by Popoviciu and Tanasesco is that of a woman, aged 24 years She was a primipara, at term, with a pelvis a little smaller than normal The fetus was large During the second stage of labor, shock supervened, which was immediately manifested by swelling involving the face, neck and upper portion of the thorax The crepitation characteristic of emphysema was present After immediate evacuation of the uterus, the course was undisturbed, and the swelling disappeared spontaneously on the tenth day The authors consider the subcutaneous emphysema here described as one of the manifestations of obstetric shock

Rivista di Clinica Pediatrica, Florence

25 857 988 (Dec) 1927

*Importance of Spleen G Macciotta —p 857

Rôle of the Spleen in Growth and Development.—In an experimental study, Macciotta has traced the influence exerted by the spleen on growth and development The significance of the spleen in the body is much greater than is usually supposed and increases as birth approaches After birth, its functioning remains necessary for development during a period that varies according to species—one month in rabbits; from twenty to forty days in dogs In animals deprived of the spleen before that critical period, all gain in weight stops at first, to be followed by a slower rate of growth Striking changes take place also in the bony skeleton, the blood, lymph nodes and internal organs If the change or suppression in the splenic functioning occurs very early, the alterations may be permanent and even result in death In older animals, the splenectomy does not bring about such important changes After a certain period of life a compensatory system for the spleen seems to develop, in which the thymus plays an important part Early splenectomy of parents does not seem to affect the off-spring Certain infantile conditions in malaria, syphilis, and so forth, may probably be associated with splenic deficiency

Archiv fur Verdauungs-Krankheiten, Berlin

41 311-460 (Dec.) 1927

*Influence of Heat and Cold on Intestinal Tonus W Weitz and W Vollers —p 311
Duodenal and Jejunal Feeding N Henning —p 321
Determination of Fat in Feces by Grossfeld s Method W Heupke —p 329
*Local Skin Irritation in Treatment of Stomach W Ruhmann —p 336
Chronic Volvulus of Stomach and Duodenum L. von Friedrich —p 350
Quantitative Determination of Gastric Function Z Stary and P Mahler —p 355
*Influence of Methods of Preparing Vegetables on Gastric Motility B Molnar Jr and M Sereghy —p 398
Volvulus of Stomach Discovered by Chance E Koppenstein —p 400

Influence of Heat and Cold on Intestinal Tonus—Using the kymograph Weitz and Vollers studied the influence of heat and cold on intestinal tonus They found that both heat and cold, applied by means of enemas, decreased the tonus of the large intestine, but heat produced a stronger and more lasting effect than cold Neither heat nor cold had a marked influence on the pendulum movements of the small intestine if the tonus of the latter was originally slight and the pendulum movements slow ('one-fifth minute rhythm') But if the tonus was strong and the pendulum movements rapid, both heat and cold exercised a markedly inhibitory effect The drinking of hot tea lowered the general tonus of the large intestine, in the kymogram the fluctuations were less extensive, but were still distinct The drinking of cold water, on the other hand entirely suppressed them, the lowering of the general tonus, also, was greater with cold water than with hot tea In this regard they note that the temperature of the cold drink was much farther removed from the indifferent point than was that of the hot drink The effects of the cold and hot foot bath were similar to those of the cold and hot drinks The application to the treatment of spastic constipation is pointed out

Local Irritation of the Skin in Treatment of the Stomach—Ruhmann believes that the production of hyperemia of the overlying skin has a wider application in treatment of the stomach than is now accorded it It is of value not only in ulcers, but in gastric vasoneuroses and gastritis, particularly in disturbances of tonus and of peristalsis, in both directions, and including the misnamed "pyloric spasm" Heat, particularly applied at intervals brushing with a wet brush, painting with a vasodilator agent rubbing with alcohol are recommended The transference of the local hyperemia of the skin to the viscus is by a segmental reflex cutaneous nerve—rami communiantes—spinal cord—efferent visceral vascular nerve The actual results of the treatment were demonstrated laparoscopically and roentgenologically

Influence of Methods of Preparing Vegetables on Gastric Motility—Molnar and Sereghy found that 10 Gm of fresh butter stirred into 80 Gm of pease porridge greatly prolonged the stay of the latter in the stomach Ten grams of wheat flour browned in 10 Gm of lard and added to 70 Gm of pease porridge prolonged it still further

Munchener medizinische Wochenschrift, Munich

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*Experimental Production of Mammary Carcinoma B Fischer Wasels —p 73
Historical Review of Metabolism S J Thannhauser —p 76
Decreased Resistance Owing to Lack of Vitamin D W Eichholz and H Kreitmair —p 79
Bacteria in Extirpated Gallbladders M Friesleben —p 81
Results of Curative and Preventive Vaccination of Wild Animals Against Tuberculosis with Friedmann s Method K Holz —p 83
Osteoclast or Chisel M. Hackenbroch —p 86
Treatment of Intestinal Diseases with Garlic. Erbach —p 87
Experiences with Methylene Chloride Dexelmann —p 88
One Third Milk as Infant Food E Moro —p 89
Superalimentation with Insulin W Fornet.—p 90
Unusual Beginning of Multiple Sclerosis W N Clemm —p 90

Experimental Production of Mammary Carcinoma—Scarlet red, dissolved in liquid petrolatum, was repeatedly injected into the mammae of female mice After six months thirty-two were still living There was no tumorlike swelling After twelve months twenty-eight were living, one of which had in the injected mamma a tumor the size of a cherry which proved to be an adenocarcinoma rich in cells After seventeen months eighteen of the mice were alive four of which had adenocarcinomas from the size of a bean to that of a cherry In one of these mice there were extensive metastases of the carcinoma in the corresponding inguinal lymph glands, in two others there were pulmonary metastases The longer the injury lasts, the more frequently does the forced regeneration go on to tumor formation

Wiener klinische Wochenschrift, Vienna

41 41 76 (Jan 12) 1928 Partial Index

Scope and Problems of Forensic Medicine K Meixner —p 41
Behavior of Uterine Musculature in Pregnancy and Birth H Knaus —p 45
*Effect of Ultraviolet Rays on Wassermann Reaction and Cutaneous Allergy in Syphilis E Rajka and E. Radnai —p 52
*Serodiagnosis of Gonorrhea E Kunewalder —p 55
Treatment of Pernicious and Secondary Anemias with Liver and Liver Extract E Huth and S Kessler —p 58
Radium Rays in Diseases of Blood Forming Organs F Dautwitz —p 62
Treatment of Gonorrhea in the Female G Doczy —p 64

Effect of Ultraviolet Rays on Wassermann Reaction and Cutaneous Allergy in Syphilis—In their effort to influence the Wassermann reaction by means of ultraviolet radiations Rajka and Radnai chose thirteen cases in which the Wassermann reaction, in spite of intensive treatment with arsphenamine, bismuth and mercury, remained positive Ultraviolet irradiation, carried out over sufficiently long periods, favors the return of the sedimentation rate of the erythrocytes and of the Matefy reaction to normal In many cases with persistently positive Wassermann reactions, the reaction swung to the negative and in the majority of cases the cutaneous allergy was greatly increased

Serodiagnosis of Gonorrhea—The Muller-Oppenheim complement fixation reaction in suitable cases aids greatly in the diagnosis of gonorrhea The technic is described The examinations on which this research is based totalled more than a thousand cases

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Blood Transfusion B Breitner —p 77
Defects of Cardiac Valves R Maresch —p 80
Diagnostic Evaluation of Tubercle Bacillus Cultivation by [illegible] Method W Hauptmann and J Burtscher —p 84

Microscopic Examination of Capillaries in Human Conjunctiva II J Urbanek and D Scherf —p 85
Calmette s Protective Inoculation Against Tuberculosis E Nobel —p 87
*Bullous Skin Disease Produced by Achillea Millefolium A Philadelphy —p 88
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Importance of Intracranial Lesion of the New Born for Obstetrics J Frist —p 93
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Bullous Skin Disease Produced by Achillea Millefolium—A bullous skin disease was observed by Philadelphy in five patients who had all bathed in a certain outdoor pool By examining the effects in one patient of contact with fourteen plants which the author gathered from the banks of the pool, he was able to identify the one which caused the disease as *Achillea millefolium* It produced an erythema when applied to the skin Eight weeks later an alcoholic extract of the leaves was applied to the skin and produced a bullous dermatitis

Serum Disease and Autohemotherapy—Of 229 patients in the obstetric service receiving concentrated polyvalent antistreptococcus serum, fifty developed serum disease In twenty of these cases of serum disease calcium was given internally alone or afenil intravenously with no great improvement In thirty cases autohemotherapy was used Ten cubic centimeters of blood was taken from the ulnar vein and immediately injected into the buttocks The results of the treatment were very favorable The best time for administration is before the exanthem has fully developed

Klinicheskaya Meditzina, Moscow

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Pirogoff as Therapist H E Kushev —p 1295
Role of Thyroid Gland in Pathogenesis of Arteriosclerosis U B Fridland —p 1300

Rôle of Thyroid Gland in Pathogenesis of Arteriosclerosis—Fridland accepts Aschoff's theory of infiltration and degeneration as being the initial process of premature arteriosclerosis Aschoff has demonstrated that the fat of atheromatous patches consists principally of cholesterol ester combinations in the connective tissue of the intima It appears that cholesteremia is the cause of arteriosclerosis Increased blood pressure alone without cholesteremia cannot produce arteriosclerosis Arteriosclerosis is the result of a faulty metabolism The latter is under the control of the endocrine glands The role of epinephrine in the production of atherosclerosis has been refuted What effect has thyroid hypofunction on atherosclerosis? Eiselsberg produced arteriosclerosis in a goat whose thyroid gland he had removed when the animal was 21 days old he killed him four months later Zondek has pointed out the early development of arteriosclerosis in myxedema Arteriosclerosis constantly accompanies obesity This condition should be treated with thyroid preparations whether it is of thyrogenic, pituitary or sex gland origin It is interesting to note that arteriosclerosis is a late phenomenon in cases of exophthalmic goiter in spite of the usual epinephrinemia Disturbance of fatty metabolism appears to be the chief cause of arteriosclerosis although disturbed albumin and calcium metabolism undoubtedly play a part The chromaffin system, the infundibular portion of the pituitary and the sex glands influence metabolism The most important factor however in the control of metabolism is the thyroid gland Removal of the thyroid results in diminution of the lipase content of the serum blood cells and the whole blood That is the result of retardation of oxidizing processes He is inclined to see in administration of thyroid and iodine an effective method of combating premature arteriosclerosis, obesity, and premature senility

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*Diphtheria Immunity M J Planteydt —p 475
Unusual Obstetric and Gynecologic Conditions A H M J van Rooy —p 507
posity and Menstrual Disturbances D von Vugt —p 514
thermy Treatment of Gynecologic Infections H Heymans —p 523
stitution and O ary G H van Waasbergen [illegible]

Immunity After Diphtheria—Planteydt tested 127 di
theria patients for the Schick reaction at intervals up
fifty-seven days after the administration of therapeutic seru
During approximately the first eighteen days the percenta
of positive reactions was about 30 After this it rose,
average for the next three days being about 50 This w
followed by a decline to the previous figure (about 3
Neither the age of the patient nor the severity of the inf
tion appeared to have an appreciable influence on the acqu
ing of active immunity The size of the dose of serum,
the contrary, appeared to have a decided influence in tl
respect—the percen of positive reactions in the l
period being much lower in the patients who had been giv
large doses, although the rise in the second period (rep
senting the extinction of the passive immunity) was
influenced He suggests as a reason for this the nonspeci
stimulating influence of the proteins of the antitoxic seru
Bacillus carriers (persons having diphtheria bacilli in t
throat longer than twenty-one days after the beginning of t
disease) who received large doses of serum were the mo
successful in acquiring immunity On the other hand, bac
lus carriers who were treated with small doses (less th
50 cc) were less successful than the general group of patien

Diathermy Treatment of Gynecologic Infections—In 1
patients with adnexitis, treated in hospital with diatherm
the results were cure, objective in 40 per cent subjective
75 per cent, improvement objective in 45 per cent, subjecti
in 17 per cent, failure objective in 15 per cent, subjecti
in 8 per cent In forty-nine patients with parametritis
pelveoperitonitis similarly treated, 40 per cent were cur
objectively, 11 per cent subjectively there were 10 per ce
of objective, 11 per cent of subjective failures The san
treatment was given to fifty-five similar patients in the ou
patient department with results that were not nearly so goo
The abdomino-dorso-vaginal mode of application was ge
erally used, the vaginal temperature was on the averag
from 40 to 43 C during the treatment, which lasted thir
minutes

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*Case of Gastric Tuberculosis E Hjort —p 20
*Erythromelalgia with Megalosplenic Polycythemia E Hval —p 31
Pirquet Reactions with Various Tuberculins A Brinchmann —p
*Fatal Case of Insulin Poisoning B Dahl —p 40

Case of Gastric Tuberculosis—Hjort records a case
early primary tuberculosis of the stomach in a woma
aged 47, with long continued dyspepsia accompanied
occult bleeding and normal acidity There were no signs
ulcer or tumor, but tubercles were found in the mucosa
the resected portion of the stomach He questions the depe
dence of the dyspepsia on the gastric tuberculosis and
inclined rather to ascribe it to a possible intestinal tuberculos

Erythromelalgia with Megalosplenic Polycythemia—Hval s patient aged 23, the blood examination and enlarg
ment of the spleen indicated erythremia the peculiar
coloration and intermittent attacks of pain with secretory a
trophic disturbances, an erythromelalgia on the border
of Raynaud s disease Syphilis appeared several years aft
the symptoms of erythromelalgia, but no relationship is s
between the two diseases The cause of the coincidence
polycythemia and erythromelalgia as well as their path
genesis is obscure The vasomotor lability was remarkabl

Fatal Case of Insulin Poisoning—Dahl publishes the fir
known case of death from insulin intoxication in Norwa
The patient aged 52, had responded well to insulin treatme
given in beginning coma On the ninth day, three hou
after the injection of insulin, she was found in deep co
with 0 025 per cent of blood sugar The administration
epinephrine and glucose was in vain Necropsy gave negati
results The fatal outcome is ascribed to the patient s failu
to take the calculated quantity of bread with the meal follow
ing the injection of insulin, thus making the otherwise
borne dose of 15 units an overdose